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CONTENTS

COVER STORY

PRIME MINISTER'S OFFICE

PARTNERS ACROSS THE PACIFIC

While trade and security are undoubtedly two of the most important aspects of the US-Japan bilateral relationship, they are by no means the only ones. The US-Japan relationship is diverse and far-reaching, ranging from scientific cooperation to cultural and educational exchange. LOOK JAPAN *takes a look at some of the people and programs that help keep the "most important bilateral relationship in the world" running smoothly.* **Page 4**

PANA

CULTURAL EXCHANGE FOR A NEW JAPAN

The blossoming of Japanese culture around the world.
Page 32

ECONOMY & BUSINESS

12 ECONOMY FEATURE: The MOF and the *Jusen* Fiasco
14 FUTURE INDUSTRIES: Computer Networks in Japan
18 COMPANY STRATEGIES: Logic
31 TAKING ON JAPAN: General Electric Japan
35 FACTS OF LIFE: The Information Rage
15 DATA BOX: Business

SCIENCE & TECHNOLOGY

22 SCI-TECH FEATURE: US-Japan Cooperation in High-Energy Physics
24 MINDS FOR SCIENCE: Shōichirō Yoshida
26 NEW TECHNOLOGY: Plastic from the Sun and CO_2
25 DATA BOX: Sci-Tech
27 DATA BOX: New Products

CULTURE

20 THE MANGA SAMPLER: Comics by Rumiko Takahashi
28 CULTURE FEATURE: Yoshiharu Habu—The *Shōgi* King
34 FROM THE HEART: Improving Public Health in Laos
36 CULTURAL CREATORS: Women Promoting International Exchange
38 SPORTS: Swimming Champion Suzu Chiba
40 EVERYDAY CONCERNS
33 DATA BOX: Short Takes
37 DATA BOX: Culture

OPINION

2 LETTERS TO THE EDITOR
3 JAPANESE PERSPECTIVE: Defending Monju
8 ESSAY: The Asia-Europe Meeting
11 COMMENT: Indonesia-Japan Relations
16 VIEWPOINTS: Dismantling the MOF
17 VIEWPOINTS: Grading Hashimoto
32 POINT•COUNTERPOINT: Cultural Exchange

EIHAN NAKANO

THE *SHŌGI* KING

At just twenty-five years of age, Yoshiharu Habu may well be the greatest shōgi player ever.
Page 28

LOVE'S LAUGHTER

Rumiko Takahashi's "gag" manga.
Page 20

PANA

MUTUAL RESPECT, MUTUAL BENEFITS

On March 1 and 2, the first Asia-Europe Meeting was held in Bangkok, Thailand... **Page 8**

PANA

POOLS OF PERSONALITY

"Suzu Chiba is back." **Page 38**

IN THE HOOD

Surfing Yokohama Some Tokyoites prefer the synthetic Wild Blue yonder in Yokohama to the elemental beaches of Chiba Prefecture, which is understandable. Wild Blue rocks don't cut your feet, and the artificial surf whips up neither jellyfish nor jagged can. It's clean, it's safe, and you don't need lotions to stop yourself getting burned. Body boarders go to improve their spins; preoccupied teenagers to mingle erotically or spend all day over a cola in the Café Madinina, throwing their long hair back. The only thing missing is the sunset. That and the crab in the rock pool; the smooth, black pebble; the Frisbee in the back of your neck... **AH**

EIICHIRŌ IWASA

LETTERS TO THE EDITOR

Spell out the philosophy

I found your cover story "Nature First" (LJ March) interesting to read. I cannot judge to what extent the Nagano Olympics project is caring for nature, but the article provides an informative overview. In another article—"The MIDAS Project: Toward Socio-ecotechnology"— subsequent to the "Nature First" article, you mostly discuss ecotechnology at an abstract level. Such argumentation supposedly provides the conceptual basis for the environmentally benign development of the Nagano area. I think that LOOK JAPAN also intended to introduce the abstract, or philosophical (*rinen*) concept of sustainable development in the article on the MIDAS project before going on to a concrete description of what is going on in Nagano. However, nowhere do you explain exactly how the MIDAS article relates to the Nagano Olympics article and I found it hard to make the connection.

Despite that, I appreciate *LOOK JAPAN*'s putting the rinen first, an approach Japan is often accused of lacking. The conceptual foundation is by far the most important thing on which action should be based in work on environmental and sustainable development. The rinen in all projects must be defined and understood at an early stage.

Fumie Kuroko
Tochigi, Japan

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LOOK JAPAN *welcomes letters to the editor. Responses and comments regarding specific articles and issues discussed in* LOOK JAPAN *are most desirable. Letters may be edited for reasons of clarity or space.*

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A CALL FOR COOLER HEADS

Kumao Kaneko, president of the Council on Nuclear Disarmament and Non-Proliferation, defends Japan's continued development of its fast breeder reactor.

BY **KUMAO KANEKO**

MORE than half a year has passed since the sodium leak occurred at Monju, Japan's prototype fast breeder reactor. The repercussions of the accident, however, have been more serious than generally anticipated; depending on future developments, they could well inflict severe damage not only on Japan's plans to use plutonium, but also on its overall peaceful use of nuclear energy.

Although the accident itself was not very serious, the Power Reactor and Nuclear Fuel Development Corporation was clumsy in handling the matter immediately afterwards, and this generated widespread distrust among the Japanese people. Unlike ordinary light-water reactors, Monju uses plutonium, which is extremely toxic and is in fact a weapons-usable material. In view of this, the people of Fukui Prefecture (where the reactor is located) can perhaps be forgiven if they feel a bit nervous, and the same can be said for the Japanese people as a whole.

On the other hand, I take issue with the way some of the mass media doggedly pursued fault-finding investigations of the Corporation and demanded with excessive vehemence that someone take responsibility (one senior employee has already committed suicide, presumably under the pressure). Furthermore, I cannot stand idly by as another segment of the media adopts the extreme view that Japan's fast breeder reactor program should be scrapped altogether.

Certainly, it appears that fast breeder reactors involve extremely difficult technologies. The US, the UK, and Germany all reached the stage of building and operating prototypes about twenty years before Japan did, but, for economic reasons as well as concerns about nuclear proliferation, all have abandoned development. France and Russia have each made it to the point of developing a demonstration reactor (one step further than a prototype reactor), but technical problems and other concerns are making further progress extremely difficult.

It is premature, however, to conclude that countries that have retreated from development programs have given up the idea of fast breeder reactors altogether. Unlike Japan, they have relatively ample supplies of oil, coal, gas, and other conventional fuels, and moreover enjoy stable supplies of uranium. Given the circumstances, they feel no pressing need to make the heroic effort required to develop fast breeder technology.

Experts almost unanimously predict that, in the twenty-first century, energy demand will grow at an explosive rate in developing countries, where more than half the world's population lives. Competition for fossil fuels will intensify, as will global warming problems associated with carbon dioxide emissions. Industrialized countries will be forced to rely more heavily on nuclear power, but this will put a strain on the supply of uranium. In the end, it will be necessary to turn to fast breeder reactors, which are dramatically more efficient in their use of uranium (as much as fifty times more efficient than current light-water reactors).

Japan's prototype fast breeder reactor, Monju.

PANA

For Japan, which is so notably poor in energy resources, fast breeder reactors are essential and must be brought to completion. For other industrialized countries, which have struggled with development for many years, Japan's continued efforts have substantial value, even if its chances for success seem slim. It would seem that other countries harbor high hopes for the mobilization of Japanese technology.

If Japan abandons its program now simply because it is difficult, the country will lose the technical achievements it has already worked so hard to make. Once these are lost, it will be impossible to quickly make up for lost time later, when it is clear that fossil fuel and uranium resources are being depleted and the introduction of fast breeder reactors becomes a pressing necessity. More than thirty years have passed since Japan seriously embarked on its nuclear energy program. Now firmly established, light-water reactor technology can no longer be considered "high-tech." Research and development of fast breeder reactors constitute one of the few state-of-the-art fields that remain to be explored. If Japan abandons it now, it will have an immeasurable impact not only on research conducted at universities and research institutes, but also on all Japanese activities related to the peaceful use of nuclear power. This is not a field that Japan should abandon lightly.

According to the new national long-term plan for nuclear energy development formulated two years ago, fast breeder reactors are predicted to come into practical use in Japan by around the year 2030. In the meantime, many difficulties will no doubt be encountered, and it could well be that more accidents will occur of equal or even greater severity than the one six months ago.

If the introduction of fast breeder reactors does prove to be indispensable in assuring that humankind can continue living in the twenty-first century without the threat of an energy shortage, Japan should press ahead. As the world's only victim of nuclear attack, and as a nation that consumes far more resources than it produces, Japan has both the qualifications and responsibility to complete this difficult task. At this time, therefore, I urge my fellow countrymen to adopt a cool-headed, long-term perspective and to keep a protective eye on Japan's scientists and engineers as they continue their strenuous efforts.

The author is a professor of International Relations at Tokai University and president of the Council on Nuclear Disarmament and Non-Proliferation. He was born in 1937 and earned an LLM from Harvard University in 1966. He worked for the Ministry of Foreign Affairs for thirty years and is the founding director of that ministry's Nuclear Energy Division.

PRIME MINISTER'S OFFICE

FRIENDS AT THE TOP TABLE: *Prime Minister Ryūtarō Hashimoto and his wife, Kumiko (left), host an official lunch for Bill and Hillary Clinton after the Tokyo Summit.*

Cornerstones of JAPAN-US FRIENDSHIP

Former US Ambassador to Japan Mike Mansfield once wrote: "Whenever I have a chance, I remind people—both Americans and Japanese—that the US-Japan relationship is the most important bilateral relationship in the world, bar none. I say this so often that people have come to expect it in every speech I make. Some even joke about this penchant of mine. But the fact remains: It's true." On April 17 this year, at the end of the Tokyo Summit, Prime Minister Ryūtarō Hashimoto and US President Bill Clinton issued the Japan-US Joint Declaration on Security—Alliance for the 21st Century. The opening sentence of that document reads, "Today, the Prime Minister and the President celebrated one of the most successful bilateral relationships in history." The leaders also reaffirmed that, "The US-Japan security relationship remains the cornerstone for achieving common security objectives and for maintaining a stable and prosperous environment for the Asia-Pacific region." This month's cover story introduces some examples of the forms that Japan-US cooperation take outside security arrangements, highlighting some of the endeavors that are being made to ensure a lasting friendly relationship.

ACCORDING to a survey conducted by *The Yomiuri Shimbun* on April 20 and 21, Japanese tend to approve of the outcome of the Tokyo Summit and their prime minister's performance in it. Of those people responding to the survey, 18.7% said they thought the Treaty of Mutual Cooperation and Security between the US and Japan was "very useful." Another 43.3% thought it "somewhat useful," whereas just 14.5% of respondents thought it "not useful at all."

Twenty-one percent of respondents "highly" regarded the return to Japan of the Futenma Marine Corps Air Station in Okinawa ("rather highly," 47.6%; "not too highly," 19.3%; "not at all," 3.5%.) At the same time, in a generally positive response, some 9.4% of respondents "highly" evaluated the advancement of bilateral cooperation under the US-Japan security relationship ("quite highly," 39.8%; "not very highly," 30.2%; "not at all," 7.9%).

According to *The Yomiuri Shimbun*'s survey, Prime Minister Hashimoto's approval rating increased 3.6% (to 48.4%) immediately after the summit meeting, while his disapproval rating dropped by 4.7% (to 36.0%). Hashimoto's approval rating was quite high in January (56.9%) immediately after he took office, but it had dropped by twelve points only two months later (44.8%). The recent upturn in Hashimoto's popularity is attributable at least partly to the leadership qualities he exhibited in the April Summit with President Clinton.

Since 1960, the Ministry of Foreign Affairs has carried out an annual public opinion survey in the US (conducted by the Gallup Organization). According to the latest survey (May 2), 82% of "opinion leaders" answered "Yes" to the question, "Do you think the US-Japan Mutual Security Treaty, which provides the US with bases in Japan for the defense of Japan and the Far East, contributes to stability and peace in the area?" Sixty-six percent of the general public also answered positively. Respondents gave roughly the same proportions of positive answers to the questions: "In your opinion, does the US benefit from this treaty in terms of its own security?" And, "Overall, do you think the US should or should not maintain the current US-Japan security treaty?"

The survey also shows that 79% of US opinion leaders regard Japan as America's most important partner in Asia (China ranks second, at 14%). Among the general public, Japan ranks top at 53%, with China again second at 16%. Eighty-seven percent of opinion leaders and 54% of the general public think Japan "dependable," against 32% who think not.

Respondents were also quite upbeat in their answers to the question, "How would you grade the present level of cooperation between Japan and the US?" Three percent of opinion leaders answered "excellent" (general public, 2%); 53% said "good" (38%); 39% said "fair" (46%); and 4% said "poor" (11%).

LONG LIVE the CHERRIES and the DOGWOODS!

"It must forever be our happy purpose in Japan and the US to nurture the goodwill and friendship symbolized by the exchange of these beautiful trees to contribute together to ensuring the happiness of all peoples and the survival of Planet Earth in the 21st century and beyond"— Masajūrō Shiokawa, vice-chairman of the Dogwood 80 Festival Organizing Committee.

IT is a well-known fact in Japan that, in 1912—well, maybe people forget the date—the then Mayor of Tokyo, one Yukio Ozaki, presented 3,000 flowering cherry trees to the US to express his gratitude for the goodwill it expressed to Japan at the end of the Russo-Japan War. These trees still blossom down by the Potomac River in Washington, D.C.

It is a less well-known fact in the US that former US President William Taft returned that gift, sending hundreds of flowering dogwood trees to Japan. The dogwoods were planted in gardens and parks around Tokyo (there are some very close to our office, in Hibiya Park) and across Japan. These trees are now as much a part of spring in Japan as the cherry blossoms themselves.

On April 26 this year, at Kensei Kinenkan, Nagata-cho (Japan's Capitol Hill), Tokyo, a Dogwood Festival was held to commemorate the 80th anniversary of that exchange. The Festival was co-sponsored by the Yukio Ozaki Memorial Foundation, the Japan-America Society, and the Japan Cherry Blossom Association.

"These flowering trees are wonderful symbols of the constancy of Japanese-American relations," reads US Ambassador to Japan Walter F. Mondale's message in the festival program. "Although this century has brought us good times and bad, the long-lived cherries and dogwoods have continued to follow the rhythm of nature, making us mindful of rebirth and renewal… The friendship expressed in Mayor Ozaki's gift to America and President Taft's reciprocation, has, it turns out, been as hearty as the trees themselves."

Said H.I.H. Prince Tomohito of Mikasa, patron of the Dogwood 80 Festival Organizing Committee, "The Japanese tend to think of diplomacy as something formal and far above their heads that is conducted exclusively by government and their leaders. Of course, lofty negotiations between countries are needed too, but I believe the most important agent of international understanding and goodwill is the cumulative effect of the generous lives and cordial personal relations of ordinary people, just as climbers add one stone at a time to build a cairn on top of a mountain."

Highlights of the Dogwood 80 Festival included the presentation of awards to people closely associated with the Dogwood and cherry trees and to winners of the *haiku*, *tanka* (forms of poetry), and photo contests. The Hanamizuki Friendship Ambassador, who will travel to the US, was introduced to the crowds, along with the Cherry Blossom Queen. Following a ceremonial planting, a symposium was held on the theme of "The Global Environment Community and Ourselves," and a choir gave a recital of the new Hanamizuki Song and other pretty tunes.

Coming to JAPAN

THE Mike Mansfield Fellowship Program was legislated by the US Congress in 1994 under the sponsorship of Senators William Roth and Jay Rockefeller and Congressmen Lee Hamilton and Doug Bereuter. The Program, which allows for up to ten US government employees each year to share experiences with their counterparts (*kanryō*) in Japan, seeks to increase US understanding of Japanese government administration and help develop lasting relationships with Japanese civil servants and business leaders. (France and the Republic of Korea have established similar training programs with Japan.) The Program is run by the Mansfield Center for Pacific Affairs, with offices in Washington, D.C. and in Missoula, Montana, in the Mansfield Library of the University of Montana, the alma mater of former US Ambassador to Japan Mike Mansfield.

"In establishing the Mike Mansfield Fellowships, the US Congress has taken a vital step toward developing a new generation of government officials with a deeper understanding of Japan"—The Mike Mansfield Fellowships Guidelines.

MICHAEL J. PETTYPOOL

MIKE MANSFIELD FELLOWS: *From left, Richard Silver (Treasury Department), Rhonda Johnson (Ex-Im Bank), George McCray (Customs Service), Stanley Austin (EPA), John Hill (Department of Defense), Amy Jackson (NASA), and James Kariya (EPA).*

The first seven Mansfield Program Fellows were chosen last year from some forty applicants. They are now coming to the end of a one-year intensive course on Japanese language, history, economics, and culture. In September, the Fellows (from the Environmental Protection Agency, the Department of Defense, NASA, the Export-Import Bank, the Customs Service, and the Treasury Department) will come to Japan for one-year's training in Japanese government ministries or other appropriate agencies as arranged by the Mansfield Center and the Japanese National Personnel Authority. (Fellows must agree to refrain from intelligence gathering or any other activities related to intelligence.) The Fellows' federal agencies in the US are responsible for their remuneration and benefits throughout the duration of the two-year program.

On their return to the US from Japan, the Fellows are required to serve at least two more years in the federal government, and they will be encouraged to continue work in US-Japan relations.

Through the Mike Mansfield Program, US government officials will improve their understanding of the motivations behind Japan's political and economic policies, enabling them to more effectively manage US-Japan relations. At the same time, Japanese government officials will doubtless find it stimulating and beneficial to get acquainted with their counterparts from across the Pacific.

Closing the COMMUNICATION GAP

"After eighteen months of language study at their respective universities and ten months intensive study here, almost all our students can speak Japanese naturally and read Japanese newspapers without difficulty"—Dr. Kenneth D. Butler, director of the Inter-University Center for Japanese Language Studies.

THE Inter-University Center for Japanese Language Studies, administered by Stanford University on behalf of a 17-member consortium of American and Canadian universities, has been running graduate programs in Japanese studies in Japan since 1963.

The Center is now located within the Pacifico Yokohama International Organizations area of the new Minato Mirai development along Yokohama Bay.

Dr. Kenneth D. Butler is serving his second term as director of the Center, having also been in charge between 1967 and 1977. In that early period, Dr. Butler worked to raise funds and establish ties between the Center and universities and other organizations. The priority objective now, he says, is to develop a pioneering program of Japanese language study using computer-based teaching materials and methods; even producing CD-ROMs.

There are currently 43 graduate students studying Japanese at the Center, which so far has graduated approximately 1,200 students.

"I regard this Center as the most important educational institution in the US-Japan relationship," Dr. Butler says. "Frankly, though, I think our enrollment is still rather low and that we must endeavor to double or even triple our current numbers. Regrettably, the number of Americans who can communicate effectively in Japanese is very small. If the bilateral relationship with Japan is really so important, then the US has to place much more emphasis on training Americans to speak Japanese.

"Obviously, this Center needs strong support—in particular, financial support—if it is to continue to provide the excellent opportunity to study that it does. We already receive tremendous support from Yokohama City, and we are extremely grateful for it."

The Inter-University Center for Japanese Language Studies has no fixed assets. Yokohama City provides the Center with its office space, equipment, and utilities, while operation costs are covered by tuition fees and subsidies from the Japan Foundation, the Japan-US Friendship Commission, and the US Department of Education.

JAPANESE THE JAPANESE SPEAK

Article 17 of the Japan-US Friendship Message states, "The two governments will further promote exchange programs between young people of the two countries," yet a tremendous gap still remains between the number of Japanese students attending college in the US and the number of American students studying in Japan.

Says Dr. Butler, "Many more Japanese have studied enough English to be able to read English-language newspapers, but very few Americans have the ability to read a Japanese newspaper. How is an American supposed to do business in Japan if he cannot read a Japanese newspaper?

"It is true that the US could do more to promote Japanese-language learning, but it is also true that Japan could do a lot more, too. First, it is in its own interests to do so. Second, consider the huge number of foreign students US universities admit from around the world each year. Japan has not shown sufficient initiative in this field and it is time it did."

To the question, "What are the keys to improving one's skills in advanced spoken and written Japanese?" Dr. Butler answers in something of a riddle: "If you want to speak with the Japanese in Japanese, you can't unless you can."

Dr. Butler says that while we recognize various forms of English, such as French English, Philippine English, or Mexican English, the Japanese will not accept Japanese that is not *Japanese*. "Japanese only truly recognize the language they speak among themselves. The sort of Japanese that most Americans speak is just not Japanese as far as they are concerned. This is a significant language barrier, yet few people seem to appreciate the height of it. Students at this Center learn to overcome that barrier through language training that centers on natural and effective communication.

"Language is a significant barrier to successful US-Japan cooperation. While there are many Japanese who speak excellent English, naturally they prefer to use Japanese for important dialogue so as not to get caught in any problem of nuance. However, almost all the negotiations and talks that take place between Japan and the US are carried out in English or through interpreters. It's hardly surprising that misunderstandings arise. Heavens! This interview will be printed in English. I should have spoken in English from the beginning. *Gomen nasai* [sorry]."

The author sincerely hopes that Dr. Butler's message has not been lost in translation.

TADASHI AIZAWA

▲ ***Using computer-based teaching materials and methods, Dr. Butler and the IUC are doing their part to increase the number of Americans who can communicate effectively in Japanese.***

TADASHI AIZAWA

◄ **PIONEERING JAPANESE LANGUAGE STUDY:** ***Dr. Kenneth D. Butler, director of the Inter-University Center for Japanese Language Studies, with graduate students.***

Students Strengthening A GLOBAL PARTNERSHIP

The long-running activities of the Japan-America Student Conference are a reminder of the power of youth in the drive for global peace.

THE Japan-America Student Conference (JASC) was established in Tokyo in 1934 by a small group of Japanese students who believed that world peace depended upon local (Pacific) peace between Japan and the US. (At the time, bilateral relations between Japan and the US were deteriorating.) Four of the group traveled to the US, visiting universities throughout the country in search of like-minded American students. They returned to Japan four months later with ninety-nine young Americans. Together, they organized the first JASC conference, held at Aoyama Gakuin in Tokyo.

The next year, 45 Japanese students traveled to the US for the second JASC conference, and a pattern was set. Japan and the US took it in turns to host the conference until the outbreak of the Pacific War in 1941. JASC resumed activities in 1947, though the next seven conferences were held exclusively in Japan. After the US hosted the 15th conference in 1954, there was another long lull in activities until, with the backing of the International Education Center, the conferences were again revived, in 1964.

JASC has been an annual event ever since, organized and administered entirely by students from the US and Japan. Every year, approximately 80 students—roughly 40 from each country—live and work together for one month at a host university. Through discussions in fields ranging from ethnic conflict and the North-South divide, and by participating in such activities as the Pan-Pacific Forum (seeks to broaden the scope of the Japan-US bilateral relationship) and Minority Day (concerned with human rights and discrimination), the students naturally deepen their knowledge and understanding of each other.

AMERICAN DREAMS

Yōko Hirose had dreamed of traveling to the US since she was a young child, and took her chance as a senior-high-school student when she stayed in Colorado for one year on an exchange program. It was as a senior-high-school student that she learned about JASC. Even as a student of international affairs at the International Christian University in Tokyo, and after entering the Tokai University School of Medicine, Hirose has maintained her interest in JASC activities.

"The US is still a country of dreams," says Hirose, "which is why young people from around the world are so attracted to it. If Japan does not maintain close ties with the US, I do not think that peace and stability in the Asia-Pacific region will last for long. In the process of strengthening the cooperative relationship between Japan and the US, I hope that Japan will upgrade its status as a global citizen. If Japan does, international respect for Japanese will increase."

Hirose is now the chairperson of the Japanese Executive Committee of the 48th Japan-America Student Conference, which will be held in Billings, Montana, St. Louis, Missouri, and Washington, D.C., from July 25 to August 22. (The theme of the conference will be "Accepting Personal Responsibility to Strengthen Our Global Partnership.") On April 18, in her capacity as a JASC chairperson, Hirose was among 300 guests invited to an official lunch to welcome Bill and Hillary Clinton to Japan.

"Two people from JASC were invited," she says. "It was a thrill for me personally, and rewarding to know that the achievements of JASC are officially recognized and appreciated."

Fifty Years of FULBRIGHT

"It is hard to shoot someone you know—or it should be"
—J. William Fulbright.

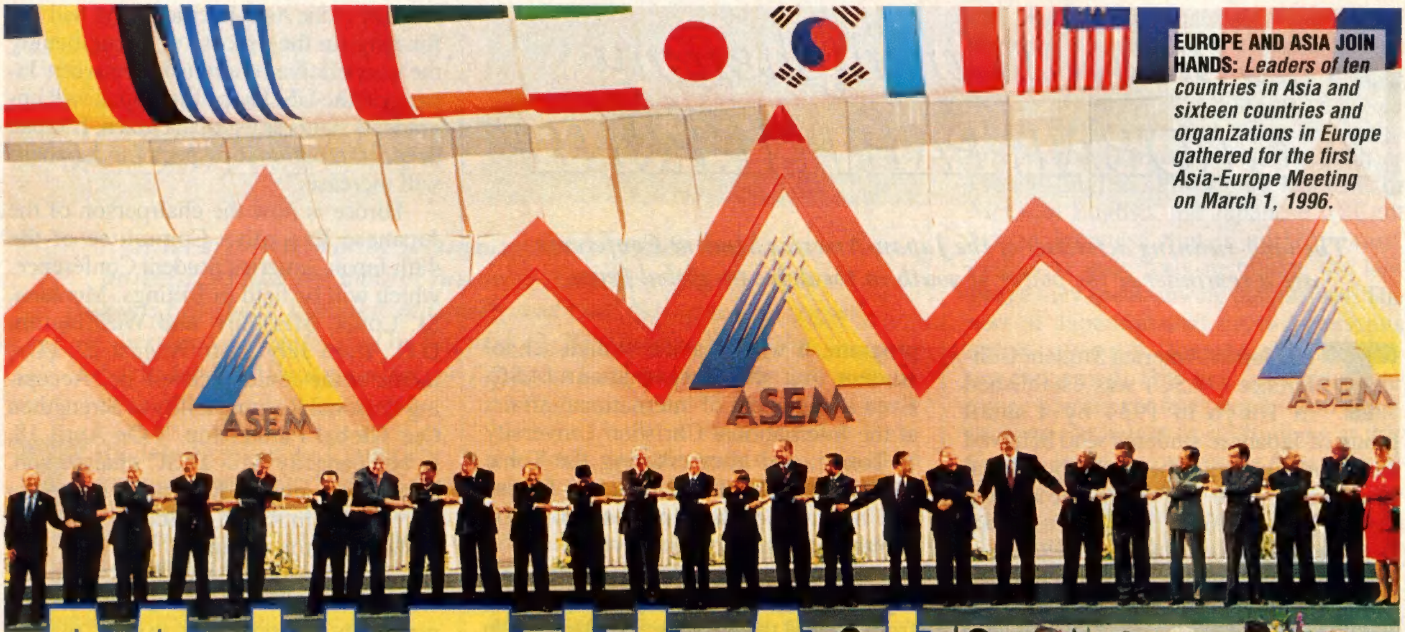
IT was August 1, 1946, when US President Harry S. Truman signed into law Senator J. William Fulbright's legislation establishing the educational exchange program now known as the Fulbright Program. On May 17, to commemorate 50 years of this most successful program, the Japan-United States Educational Commission hosted an Asia Regional Symposium and Reception in Tokyo. On the same day, the Japan-US Visual Media Culture Foundation announced the completion of a documentary film on Senator Fulbright, *Bridge to Peace: The Fulbright Story*.

One hundred and fifty countries now participate in the Fulbright Program, and over 200,000 individuals from around the world have studied overseas on Fulbright funding. Of those 200,000, 6,500 Japanese and 1,600 American Fulbrighters have participated through the Japan Program, which began in 1952. (Before the Fulbright Program, the GARIOA Program—Government Aid and Relief in Occupied Areas — sent about 1,000 Japanese to the US between 1949-1951.) Since December 24, 1979, the Japanese and US Government have split the cost of funding the program.

Fulbright's conviction was that learning to understand other countries through the exchange of young students was the first step to eliminating wars. He first proposed establishing the program less than two weeks after the US dropped the atomic bomb on Hiroshima.

At the recent Japan-US Summit meeting, Prime Minister Hashimoto and President Clinton acknowledged the accomplishments of the Fulbright Program and agreed to enhance the Japan-US relationship by establishing a new Fulbright Memorial Program for American education in Japan.

BY **KUNIO NISHIMURA** WITH **HITOSHI CHIBA**



EUROPE AND ASIA JOIN HANDS: *Leaders of ten countries in Asia and sixteen countries and organizations in Europe gathered for the first Asia-Europe Meeting on March 1, 1996.*

PANA

MUTUAL RESPECT, BENEFITS

The Asia-Europe Meeting marks the beginning of a new trilateral age of North America, Asia, and Europe.

BY **KATSUYUKI NAKAGAWACHI**

ON March 1 and 2 this year, the first Asia–Europe Meeting (ASEM) was held in Bangkok, Thailand. Heads of state from ten countries in Asia and sixteen countries and institutions in Europe, including the EU, gathered together to discuss relations between the two regions and how they could be strengthened.

ASEM is significant for three reasons.

The first significance is historical—the March meeting was the first time ever that heads of state from Asia and Europe had gathered together on an equal footing. ASEM was a good opportunity to lay to rest past colonial relationships and build a new partnership. For the Asian countries in particular, there was much emotion and pride at being able to summon to Asia the heads of their former colonial masters.

ASEM's second significance is that it formed a new bridge for dialogue and cooperation between Asia and Europe, where relations have not been as tight as they have between Asia and North America or between Europe and North America.

North America and Europe cooperate on a broad range of issues because of their common historical and cultural background, and Asia and North America have forums like Asia-Pacific Economic Cooperation (APEC) and the ASEAN Regional Forum (ARF) at which to develop cooperation in the political, security, and economic spheres. But relations between Asia and Europe have been so thin as to cause some to describe them as the "missing link" in the trilateral world structure. These two regions have never before had an official forum for dialogue and cooperation, nor have there been any opportunities for their heads of state to talk to each other directly.

ASEM tried to make fundamental changes in Asia–Europe relations by strengthening their dialogue and cooperation in such wide-ranging fields as politics, economics, and culture. The Bangkok meeting was a large first step toward building closer ties and enhancing mutual understanding and benefits between Asia and Europe. Britain's Prime Minister John Major remarked that the meeting had "completed the circle of the world's three great engines."

The third significance was that ASEM has helped to erect a new international framework for the post-Cold-War world. ASEM takes a comprehensive and integrated approach that goes beyond mere economics to cover issues in politics, security, and culture. The Chairman's Statement provides clear articulation of a vision of stronger Asia–Europe cooperation on truly global issues such as "UN reform," "strengthening global initiatives on arms control, disarmament and nonproliferation of weapons of mass destruction," and "early conclusion of the Comprehensive Test Ban Treaty in 1996."

The meeting also went on to discuss what were, in the words of Japanese Prime Minister Ryūtarō Hashimoto, "issues with global ramifications"—support for peace and reconstruction in the former Yugoslavia, suspicions of nuclear arms development in North Korea, and cooperation for the Korea Energy Development Organization (KEDO). Five years after the end of the Cold War, the international community is still struggling with the creation of a viable "new world order," and stronger cooperation between Asia and Europe through the ASEM forum promises to make significant contributions towards that end.

One of the things that sets ASEM apart as a large-scale international meeting is that the US was not involved. Indeed, the phrase "a summit without the US" was used almost as often as "a new partnership between Asia and Europe" to characterize the Meeting. Certainly the establishment of a new framework for international cooperation that does not involve the US is significant. It marks the beginning of a new trilateral age of North America, Asia, and Europe.

Chinese Prime Minister Li Peng spoke of "the end of the period when one or two superpowers could dominate international relations" and was apparently pleased by the fact that the US had not been asked to come. Indeed, China seems to have found the absence of the US to be ample justification for actively taking part in the meeting while relations between the two countries are strained over Taiwan and participation in the WTO.

Meanwhile, on the European side, Jacques Santer, President of the European Commission, called on the summit to "work together and be determined to resist all forms of unilateralism and managed trade," an oblique reference to the Super 301 provisions of the US Trade Law and America's penchant for trade policies that include numerical targets. Thus, while the US was not a participant in ASEM, it did play a large part in the meetings. Indeed, it was the unnamed star of the show.

LAYING INROADS

Setting the stage for the birth of ASEM was Asia's emergence as a "world growth center." In fact, it was Asia that took the initial steps in getting ASEM organized. Prime Minister Goh Chok Tong of Singapore first proposed it on a visit to France in the fall of 1994, and France shepherded the idea through the EU.

Europe was eager to accept Asia's invitation because it wants a crack at the fast-growing markets of the region. The US has used APEC to leverage its way into Asian markets with surprising speed, leaving Europe feeling alienated and left out in the cold. ASEM gives Europe a way to counteract the US-led APEC, as well as an opportunity to make up for lost time.

Europe wants to make inroads into Asia because it faces serious economic stagnation at home. Singapore now has a higher per-capita GNP than its former colonial ruler, Britain, and Germany is recording its highest unemployment in the postwar period. Unemployment is a problem for all European countries, not just Germany, and in making overtures to Asian markets they hope to use Asia's growth to secure Europe's jobs.

There are benefits for Asia as well, of course. The ASEAN (Association of Southeast Asian Nations) countries see ASEM as a way to expand their pipeline into Europe and solicit greater investment and technical cooperation. Foreign Minister Ali Alatas of Indonesia noted that "over the next ten years Asia will require between $130 billion and $150 billion a year in infrastructure investments alone." Economic growth has caused the demand for funding to surge.

According to a study by the Japan External Trade Organization (JETRO), European direct investment in the ten Asian countries participating in ASEM doubled between 1990 and 1994, but still dropped from 13.3% to 10.8% of total investment coming into the region. These extremely low levels of European investment compared to those of, say, the US, has bred much dissatisfaction and irritation among the ASEAN countries.

The Asian side also wanted to use stronger relations with Europe to check the growing influence of the US in APEC. Up until this point, bilateral relations and the APEC forum have given Asia deep ties only with the US; ASEM enables them to add the "European card" to their deck, increasing their say and influence within APEC.

The Chairman's Statement summarizes the achievements of the first ASEM meeting in terms of five general areas: "towards a common vision for Asia and Europe," "fostering political dialogue," "reinforcing economic cooperation," "promoting cooperation in other areas," and "future course of ASEM." The Statement contains concrete proposals for strengthening relations between Asia and Europe.

Trade between Asian countries and the EU -1994

	EU's Imports from (1000 ECU)	EU's Exports to (1000 ECU)	EU Trade Balance (1000 ECU)
Brunei	313,914	785,838	471,924
Indonesia	5,890,018	4,311,424	-1,578,594
Malaysia	7,493,298	5,765,607	-1,727,691
The Philippines	2,131,491	1,957,588	-173,903
Singapore	7,801,206	8,842,594	1,041,388
Thailand	6,334,858	6,100,968	-233,890
Vietnam	876,394	616,522	-259,872
ASEAN Total	30,841,179	28,380,541	-2,460,638
China	23,012,385	12,508,908	-10,503,477
Japan	48,821,167	26,582,891	-22,238,276
South Korea	8,688,412	10,024,841	1,336,429

1 ECU = ¥ 129.6 on May 13, 1996

Source: Eurostat-Comext

The common vision section announces the resolve to form a new "Asia-Europe Partnership for Greater Growth." It also enunciates clear principles for political dialog between the two regions: "mutual respect, equality, promotion of fundamental rights, and non-intervention in each other's internal affairs." It further notes the importance of reinforcing dialogue on security issues.

In the section on reinforcing economic cooperation, the statement "recognized the great potential for synergy" between the two regions and announced the "resolve to generate greater two-way trade and investment flows between Asia and Europe." Having done so, it positions increases in European investments in Asia as an "urgent need," while also encouraging Asian investments in Europe. As part of this, it seeks a reduction in the barriers to trade by taking such "liberalization and facilitation" measures as simplification and improvement of customs procedures and development of common standards.

Other areas of cooperation include environmental concerns (global warming, protection of water resources, biodiversity), and international crime-fighting (illicit drug trade, money laundering, terrorism). And finally, there will be greater cooperation in poverty alleviation, promoting the role of women, and efforts to combat AIDS .

In charting the future course of ASEM, the participants agreed on several important joint follow-up measures. 1) In 1997 they will hold meetings for foreign ministers (place to be announced) and economic ministers (in Japan). 2) In July 1996 they will hold an informal senior officials' meeting in Brussels on trade and investment liberalization and facilitation. 3) Within six months a working group, meeting in Thailand, will draw up an "Asia-Europe Investment Promotion Action Plan" to promote greater crossflows of investment between Asia and Europe. 4) An "Asia-Europe Business Forum" will be estab-

PANA

A SECTION OF THE MEKONG RIVER NEAR VIENTIANE, LAOS: *ASEM agreed to begin work on the Mekong River Basin Development plan, which will be a major project for Europe-Asia cooperation.*

lished to strengthen private-sector cooperation between the two regions, with its first meeting to be held in France in 1996 and its second meeting in Thailand. In conjunction with this, a business conference will also be held in 1997. 5) An "Asia-Europe Environmental Technology Center" will be established in Thailand. 6) An "Asia-Europe Foundation" will be set up in Singapore to promote exchanges between think tanks, peoples, and cultural groups. 7) An "Asia-Europe University Program" will be started with a view to developing better understanding of the cultures, histories, and business practices of both regions. 8) Intellectual exchanges between Asia and Europe will be promoted by establishing networks among the appropriate think tanks from both regions. 9) Objective studies will be done on the economic synergy between Asia and Europe. And 10) youth exchange programs of a mini "Davos-type" consisting of scholars, politicians, business people, and artists will be held to promote younger people exchanges.

OPEN REGIONALISM

The meeting also agreed to begin work on two big projects for future cooperation: studies on the integration of a trans-Asian railway network and consideration of the Mekong River Basin Development plan. The trans-Asian railway was a proposal from Malaysia's Prime Minister Mahathir Mohamad and will begin initially as part of the railway project in the Mekong River Basin Development plan, though the ultimate goal is to study the possible integration of this railway network with the trans-European railway network. Malaysia will take the lead in this research. A comprehensive plan for developing the basin of the Mekong River, which cuts across the Indochina peninsula, is currently being considered by the UN Mekong River Committee and the Asian Development Bank. It is a topic of much interest to both Asia and Europe and was seen by the Bangkok meeting as a project that would symbolize the new economic cooperation between the two regions.

Future ASEM meetings will be held on a biannual basis, alternating between Asia and Europe. Formal decisions were reached to hold the next session in the UK in 1998, followed by South Korea in 2000. At the same time, the informal summit confirmed that ASEM did not seek to be a permanent institution, though the decision to hold regular biannual meetings means that it will indeed become a formalized event.

There are still several hurdles to overcome before ASEM can become established as a framework with a specific role to play in the international community.

First is the question of whether it will truly be able to avoid narrow regionalism and maintain the "open regionalism" spoken of in the Chairman's Statement.

The statement made repeated affirmations that ASEM would seek the same kind of "open regionalism" as APEC and not become an exclusionary trading block.

It also emphasized the meeting's intention to make strong contributions to the WTO-led multilateral trading system: "The Meeting stressed that any regional integration and cooperation should be WTO consistent and outward looking," and, "the ASEM process should complement and reinforce efforts to strengthen the open and rules-based trading system embodied in the WTO." Participants further pledged to "work closely together towards the success" of the first WTO Ministerial Conference to be held in Singapore this December.

Asia fears that a unified Europe will be inward-looking and form what amounts to an economic bloc. What Asia needs more than anything else if it is to continue to enjoy high growth is "open regionalism," a free, multilateral trading system with North America and Europe. If the principle of "open regionalism" with Europe and North America breaks down, it will be a fatal blow to Asian growth. Asia therefore wants to use ASEM to ensure that Europe behaves.

Another hurdle is how to handle such "universal values" issues as human rights, democracy, and labor standards. During the Bangkok meetings, both sides wanted to emphasize the historical significance of the first meeting of Asian and European leaders and therefore avoided getting into issues like human rights where differences of opinion would have invited conflict. The Bangkok meeting therefore said little about universal values, and that silence leaves grave doubts as to how reliable and resilient it will be as an international framework.

The Asian side likes to stress "Asian values and traditions" on things like human rights and labor standards, and Thai Prime Minister Banharn Silp-archa, who chaired the meeting, was quick to point out that ASEM was only a forum for dialogue and cooperation, "delicate and painful issues should be handled elsewhere." Some European delegations wanted to put issues like Indonesia's occupation of East Timor and China's dodgy human rights record on the agenda, but Asia was able to pull enough strings ahead of time that there were no statements about individual issues during the proceedings.

Europe, placing the higher priority on access to Asian markets, carefully avoided unnecessarily annoying Asia with issues like human rights this time around, but the next session will have little of the festive mood of this one and will be held in Europe (the UK), which will almost guarantee that greater weight is put on values questions.

How responsibly it overcomes the hurdles of "open regionalism" and universal values will determine whether ASEM is ultimately just another "political show" full of empty speechifying or whether it develops into a framework for substantial dialogue and cooperation. LJ

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INDONESIA-JAPAN RELATIONS: A NEW ERA?

BY **HERO U. KUNTJORO-JAKTI**

THE end of the Cold War has contributed to domestic tensions in many countries around the world—the former Yugoslavia, Afghanistan, Somalia, to name just a few. In Asia's newly industrializing countries—South Korea and Taiwan, for example—popular political movements have arisen causing political tensions. Moving toward more nationalistic policies has become a global trend.

At the same time, regional trade organizations are being established worldwide. Of the 109 regional organizations established since 1948, almost one-third of them—the European Community (EC) and the North American Free Trade Agreement (NAFTA) being the most prominent examples—were established after 1989. While this so-called globalization has contributed to global wealth, those countries that feel they have been disadvantaged by globalization may react against it. In this regard, interest groups within these countries may pressure their governments to take necessary action. Such is the state of affairs in Indonesia.

A ROUGH ROAD AHEAD: *With a per-capita income of less than $1,000, Indonesians are struggling to compete in the "global" economy. Pictured: the capital city of Jakarta.*

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Indonesia is still a developing country, with a per-capita income of less than $1,000 and a national debt of about $100 billion. As the modern economic sector grows, so the number of people moving out of agricultural areas and into Jakarta and other big cities increases. Some of these people are involved in labor organizations and other urban movements that are actively protesting the government's policies on such issues as newspaper censorship and the minimum wage. Taking all this into consideration, it is easy to understand why the more equitable distribution of its national income is the most crucial issue in Indonesia today.

Meanwhile, Indonesia is facing increased competition with other burgeoning Asian economies in terms of exporting commodities, foreign investment, and so on. Unfortunately, Indonesian entrepreneurs have been more attracted to investments in real estate and finance than to manufacturing. Some Indonesian entrepreneurs have invested in petrochemicals, plywood, palm oil, and paper products, but only a very limited number have invested in electronics, machinery, or other manufactured goods.

Moreover, the government has issued special licenses allowing only a select few to trade in certain products. Most of these individuals belong to interest groups that are supported by certain bureaucrats and politicians. In return, these groups extend their political support to those in power. While the amount of government money allocated for these interest groups continues to increase, government revenues from oil, gas, and exports in general have declined. For the time being, the state is incapable of disciplining its apparatus and supporters. This is one of the main factors behind Indonesia's move toward a more nationalistic economic policy.

Case in point: "Chandra Asri," a newly-established petrochemical industry which has received special protection from the Indonesian government. By establishing this industry, the government expects to cut its dependence on imported petrochemical products and, in turn, reduce its trade deficit. Later on, the government announced another industrial policy which was even more controversial: it established "Timor," a national automobile industry, with help from Kia, a Korean automobile industry.

Both of these governmental policies have directly affected Japanese companies. Because the Japanese auto industry has operated in Indonesia for more than two decades, Japan's reaction to a new Indonesian automobile industry was quite strong. In Indonesia, however, it is surprising to see how support for this nationalistic policy has come from many people, even those who are usually critical of the government's policies. These people may or may not support the interest groups and politicians behind the policy, but they agree that Japan has been too restrictive in transferring technology and assisting in the development of export industries. Indonesians, they argue, have spent a lot of money importing goods related to the automobile industry, spending which has greatly benefited Japan.

Clearly, Indonesia needs to develop more income from exports other than oil and gas, especially now that the revenues from those resources are decreasing. Given these circumstances, the government should pressure the private sector to export more. An increase in technology transfer would no doubt increase Indonesia's exports and assist in the further industrial development of the country.

Friction between Indonesia and Japan can be expected to increase over the next five years. Growing political costs, the declining oil and gas industries, the need to improve technology, and even the willingness to play the Korea card will continue to drive Indonesia toward more nationalistic economic policies.

Indonesia has integrated its economy into the Asia-Pacific region and the international system. While the solutions to Indonesia's problems remain domestic, the international community could also extend help. The US, Japan, and even newly industrializing countries must contribute to the process of globalization. It is difficult for the smaller and weaker economies to embrace liberal markets if the world's most powerful economies are reluctant to do so. Positive measures such as reducing barriers to foreign imports and increasing the rate of technology transfer would surely contribute to the commitment of the world's weaker economies to the principles and practices of liberal markets. LJ

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ECONOMY FEATURE

THE MOF AND THE *JUSEN* FIASCO

Where did the Ministry of Finance go wrong in its handling of the jusen*—the seven Japanese housing loan companies that folded this year with a total debt of ¥13 trillion ($120.8 billion)?*

BY **SHŌICHI RŌYAMA**

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ANNOUNCING THE CLEAN-UP PLAN: ***(From left) LDP Chief Cabinet Secretary Seiroku Kajiyama, Minister of Finance Wataru Kubo, and Prime Minister Ryūtarō Hashimoto.***

THE Ministry of Finance (MOF) has managed the nation's financial affairs since its establishment on August 15, 1869. In that time it has never been more severely criticized than it has over the *jusen* (housing loan company) fiasco.

The financial institutions that lent money to the jusen are diverse, ranging from Japan's leading city and long-term credit banks, to small, regional banks. Agricultural cooperatives are among the major lenders. Since the means for liquidating the jusen may effect considerable losses for many of these banks and cooperatives and, in turn, cause anxiety about the credibility of the banking system as a whole, banks with large reserves will have to bear the bulk of the losses.

The MOF itself set about cleaning up the mess, and has prepared drafts for settlement. However, the ministry's proposed budget allocation of ¥685 billion ($6.36 billion) from the nation's general account has not been popular with the public.

FLAWED FROM THE START

Providing better access to housing financing has been an important policy goal for the government since the end of World War II. However, it is open to question whether setting up and fostering specialized housing loan companies was an effective and appropriate way to achieve that goal. Since the Meiji period (1868-1912), funds for special purposes were distributed using a system of specialized financial institutions. This method became ineffective when liberalization of the financial system started. By 1985, when the MOF's Financial System Research Council (FSRC—the authorized advisory organization for the banking system under the MOF) began reviewing the system of specialized financial institutions, the system had lost its raison d'être.

Nippon Housing Loan was the first of the housing loan companies to be established, in 1971. Three more were founded in 1973, and by the end of that year the FSRC had released a report entitled "How to Promote the Private Housing Loan Market." The report stated that it would be better for specialized housing loan companies, which lend mainly on physical security, to develop the housing loan market, and for existing financial institutions, such as city banks, to continue to finance industries mainly on personal pledge. During the "bubble" economy, housing loan companies relied too heavily on security of real estate and indulged in careless lending practices. This was concurrent with the bubble phenomenon of skyrocketing land prices and a management policy officially sanctioned by the financial authorities.

In hindsight, the concept of a housing loan company was questionable from the start. Basic management principles, along with other aspects of the system, inevitably forced a withdrawal from the market in a rapidly changing financial environment. The MOF had avoided examining this doubtful existence too closely, which is justification enough for the severe criticism it has received. But the problems did not stop there. The failings of the jusen management were brought to light with the collapse of the bubble economy. The MOF was inconsistent in its actions and made many errors.

THREE BIG QUESTION MARKS

First, the MOF did not place the jusen within the scope of the total lending restrictions for land. It did not apply the regulations to agricultural financial institutions that restricted loans to three areas (real estate, construction, non-bank). If it had applied these regulations, as it did with other financial institutions, and requested agricultural financial institutions to restrict loans to the three industries, it would have been able to avoid the current situation to some extent. Furthermore, loans by jusen to housing-related companies, including real estate companies, accounted for 75% of total lending. The jusen lost their image as companies that specialized in making housing loans to individuals.

Agricultural cooperatives raised a great deal of deposits from member farmers who got money from, for example, the sale of farming land, yet they faced great difficulties in finding investment outlets for this money. Clearly the MOF (and also the Ministry of Agriculture, Forestry and Fisheries [MAFF]) had a dual purpose when it exempted the housing loan market from the regulations that governed other financial institutions: it wanted both to encourage the jusen to return to their initial purpose and to relieve the agricultural cooperatives of their difficulties in investing their surplus funds.

The MOF's second mistake was that it took too long to liquidate the jusen once they had become insolvent. In the spring of 1992, when it was widely-known that the jusen were technically insolvent, the parties involved began to examine a reconstruction plan. The measures called for were not successful. Reportedly, the MOF did not approve of the drastic reconstruction plan proposed by the banks that originally set up the jusen. Instead, the MOF drew up a compromise package of halfway measures.

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THE MOF IN THE DARK: *The Ministry of Finance has had to fend off fierce criticism of its role in the jusen fiasco.*

Immediately prior to the completion of these measures, the then director of the Banking Bureau of the MOF sent a memorandum to the Economic Affairs Bureau director of the MAFF, promising that (excerpt, February 3, 1993) "the financial institutions which established the housing loan companies would deal with the problem on their own recognizance in accordance with the rehabilitation plan (the MOF will lead under its own recognizance so that a burden beyond that included in the measure may not this time be imposed on agricultural cooperative financial institutions)." (Those agricultural coops are the Norinchukin Bank [Central Cooperative Bank for Agriculture & Forestry], Credit Federations of Agricultural Cooperatives, and the Mutual Insurance Federations of Agricultural Cooperatives). If drastic measures of the kind proposed by the founders of the Nippon Housing Loan had been implemented for all of the jusen no later than the start of 1993, the losses would have been much smaller. The above memo was another factor that adversely affected the negotiations between the Banking Bureau, the MOF, the Economic Affairs Bureau, and the MAFF that took place toward the end of 1995. So badly did it affect the situation that the jusen problem is now seen by the government as impossible to resolve without using ¥685 billion from the general budget account.

Third, there are many questions about the MOF's actions after the bill to liquidate the jusen was put before the Diet under the Hashimoto Cabinet. (The Hashimoto Cabinet replaced the Murayama Cabinet after it became clear that the government's plan to liquidate the jusen had caused the entangled situation.) A typical example is a MOF statement that if the jusen problem were to be handled as suggested by the government, the future rescue of banks in difficulties would not require further tax money. The result has been a great delay in placing the bills on the deregulation of the financial system before the Diet, thereby preventing the smooth liquidation of the credit cooperatives, which had already been declared bankrupt.

An additional measure to liquidate the jusen demands efforts by the jusen founders' banks and agricultural cooperatives to reduce costs and restructure. This is designed to increase their corporate tax, and is a mediocre measure hardly worthy of mention. Even pressure by the MOF to encourage managers to resign only served to reduce its authority.

The MOF's administration of banking is on the verge of failure. The evidence is not limited to the jusen situation. The Daiwa Bank scandal leaves the actions of the MOF in doubt, no matter which angle it is seen from: its receipt of the report from Daiwa Bank, its actions following receipt of the report, and its actions after the US authorities announced the punitive measures. In addition, the reported scandal of the Deputy Director of the Budget Bureau helped further reduce people's trust in the MOF.

A WAY FORWARD

It is essential that reform of banking administration and the overall administration of Japan's finances begins now. This is not a call for the dissolution of the MOF, but a call for specific proposals about the future regulation of the administration of finance.

First, it is necessary to have a clear outlook on the future Japanese financial system, and how the outlook will be achieved. Second, the future administrators of finance must understand and agree with the basic characteristics of the future financial system. This will transpire from the first point. Third, after clarifying the above two points, it is necessary to consider the form of organization that will be required to achieve this desirable financial administration.

A study must be carried out to determine whether a new financial administration is possible just by demanding a change of consciousness and behavior among administrators, without changing the conventional organization. Last, as a result of steady deliberation, it will become possible to discuss the dissolution of the MOF itself. It has to be made clear exactly what kind of organization the administration of finance requires and how the MOF's administration should be changed to achieve that.

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NETWORKING JAPAN

LOOK JAPAN *spoke with Shumpei Kumon, executive-director of the Center for Global Communications (GLOCOM), about the past, present, and future of computer networks in Japan.*

LJ: What is the current state of computer networks in Japan?

SHUMPEI KUMON: About ten years ago, when the "bubble" economy was at its peak, Japan considered itself to be advanced in the info-communications industry. But it was ignorant about the importance of computer networks. Even in the early 1990s, computer networks in Japan lagged far behind those established in the US and Europe, and it was not until around 1993, when leading US publications like *Time* and *The New York Times* began running articles about the lack of computer networks in Japan, that the message finally sank in here and interest in the subject soared.

Today, the Internet is expanding rapidly in Japan, as it is in the rest of the world. And while the rate of expansion in Japan does not match that seen in the US, for example, the level of public interest here is very high.

The government's response to the lag in info-communications has been quite swift, too. In May 1994, the Ministry of Posts and Telecommunications and the Ministry of International Trade and Industry (MITI) released a report on Japanese information networks and services. In the fall of the same year, the government established the Advanced Information and Telecommunications Society Promotion Headquarters, with the prime minister at its head.

The government is also striving to foster info-communication in public administration. In fiscal 1995, most government ministries and agencies drafted implementation plans pertaining to the information society. The combined budget for the introduction of information technology such as fiber-optic cable has already reached well in excess of ¥1 trillion ($9.49 billion), and results are unquestionably being achieved.

LJ: Which of the plans related to computer networks in Japan is the most important, or prominent, at the moment?

SK: In June last year, NTT (Nippon Telegraph and Telephone) announced the revolutionary Open Computer Network (OCN) plan. This calls for the construction of a computer-dedicated network that differs from conventional telephone networks. By carrying out routing using Internet protocols, the OCN can make available low-cost, 24-hour connected network services. A very clear vision of the trunk line section of Japan's computer networks has emerged from NTT's new strategy. The problem is that it makes no sense for networks to have only trunk lines. For a computer network, it is very important that the computer terminals are linked to each other at their respective ends. It is vital that they be hooked up to the trunk line to configure a large network. Ultimately no demand will emerge for the trunk line if there are no solid, local networks at these ends. However, some large companies are beginning full-scale construction of local area networks (LANs) for Intranets [corporate internal web building], and once this is done, these networks can then be hooked up to the OCN. It has also been suggested that every community in Japan build its own Community Area Network (CAN). If all houses, shopping centers, schools, and hospitals in such an area were linked up using CANs, the demand on the trunk line would become even greater.

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NETIZENS OF THE FUTURE: *Japanese businesspeople learn about the Internet at last year's Data Show in Harumi, Tokyo.*

LJ: The implications of this would be that computer networks will become even more important in the 21st century.

SK: There is no question that computer networks, as typified by the Internet, will be the most important structure of the info-communications foundations of the coming information society. The first industrial revolution, based on light industry, began at the end of the 18th century; the second industrial revolution, based on heavy industry, at the beginning of the 19th. We are now entering the third industrial revolution, based on the information industry. The early stages of an industrial revolution is the time to lay the foundations and build the infrastructure to transform technological paradigms and the industrial structure. While one can't expect very sophisticated output in the early stages, things still have to be made. For example, railway tracks were laid down as early as the first half of the 19th century in England, but because the rails were made of pig iron, the steam trains could not reach high speeds. However, at least the English learned how to lay the rails, devise timetables, and run the railways. Later, when steel could be produced at relatively low cost, they began replacing the pig iron rails with steel rails. Similarly, while it is not possible at the moment to string up complete fiber-optic cable networks across the nation, it is important to find some way to build networks. Even though this means using copper wire and coaxial cable, it is a necessary step in developing the information processing technologies and the transmission technologies to be used in those networks.

LJ: What changes to society will the spread of computer networks bring about in the future?

SK: One of the major changes is that the number of "Netizens" will increase. Netizens are people who use computer networks to disseminate knowledge and information discovered or created by them, with the aim of acquiring some sort of intellectual sphere of influence. "Citizens" were originally people involved in commerce and industry, such as producing and selling goods and services. Netizens are people who create knowledge and information instead of goods and services, and share these with other people. They do not charge for this, but prefer to have the power of intellectual influence over other people. Netizens take great delight in disseminating knowledge, even if they don't have any direct sphere of influence. While there have always been people who fall into this category, such as school teachers, artists, and clergy, the new Netizens are unique because they use computer networks as their main means of dissemination, and conduct their activities in this arena. The number of Netizens is increasing all over the world. Members of nongovernmental organizations (NGOs) or nonprofit organizations (NPOs) are a specific example of this; they use networks to examine environmental and human rights problems. Citizens of the 20th century used cars and railways to move from one place to another in space. They received information from the radio and television, but had few opportunities to be senders of information. While the Netizens of the future won't do much physical relocation, they will want to use information accessed by computers for interesting ends. People will not just receive information as a one-way process, but will become active operators of information devices, search for information themselves, make something from it, and then transmit the result.

The use of computer networks will lessen the physical movement of people from place to place, and will also have important consequences for the future of the global environment. The world's population continues to increase. It is obvious that if humankind continues to consume resources at the current pace, environmental problems will intensify. The development of computer networks will help prevent resource and energy shortages as well as environmental pollution.

LJ: What computer network-related industries should we look out for in the future?

SK: I think that the industries that will achieve major growth in the 21st century are those that apply virtual reality technology. Virtual reality will make it possible to bestow shape, color, sound, and even smell and feel to human ideas. It is gradually becoming possible to represent things in a "real" form, a form that cannot be distinguished from the real thing by the human senses. Virtual reality will create a new world that will give people experiences that match the world we actually live in, or experiences that are even more attractive than reality. This is "Cyberspace," a different spatial dimension from the physical dimension we know. It would be no exaggeration to say that within this space there are virtually unlimited pioneering possibilities. Pioneering Cyberspace is the job of Netizens, and business opportunities will expand from this. We can definitely enter Cyberspace with a great deal of reality. Sometime in the 21st century the day will come when human cranial nerves can be directly hooked up to Cyberspace, just as William Gibson predicts in his famous science fiction novel, *Neuromancer*.

BY **OSAMU SAWAJI**

DATA BOX
BUSINESS

Changing times Things are going to be different in Japanese business, according to a survey of 100 company presidents. For example, 77.6% said they're already basing pay on ability rather than seniority; the rest say they're considering or planning to implement that system. Not a single one ruled out the possibility of ability-based pay. E-mail is another innovation that has clearly caught on: 83.3% of the top execs said their companies were using it, 5.6% said they'd have E-mail systems in place soon, and 10.2% said they were looking into it. Less than 1% said they weren't even thinking about it. Changes may also be afoot in the bonus system: 21.2% of the presidents said their companies had switched to fixed annual salaries, and 48.1% were considering it. But don't expect any swift action on stock options as a form of compensation: a mere 1% said they were offering stock option plans, 21.2% were considering it, and almost 78% said options weren't even an option.

Tax hike Japan's consumption tax is slated to rise from 3% to 5% next April, and, if a recent survey is to be trusted, there'll be a consumer feeding frenzy in the run-up to the tax increase. Homes, cars, major appliances, and computer gear are some of the items topping the pre-tax hike shopping lists.

Power brokers Private companies in Japan are now allowed to generate electricity for sales to electrical utilities, which opens up a host of opportunities for major manufacturers—especially those in the oil and steel business—which already operate power plants to run their mills and refineries. These companies have the technology needed, and many have vacant industrial space for new power stations. Selling electricity may be just what it takes to recharge their recession-battered balance sheets.

Sweet success The trend toward lower-calorie foods is resulting in booming sales for sugar-free chewing gum, candy, and other products. For example, Lotte's sugar-free chocolate "Zero" far exceeded its sales targets in test marketing, and will go on sale nationwide this fall. The company expects sales of ¥10 billion ($94.8 million) in the first year. Other sugar-free winners include ice cream and canned tea and coffee.

PANA

SMALL CHANGE? *From next April customers will spend 2% extra at Japanese tills.*

BY **CHARLES WHIPPLE**

DISMANTLING THE MOF

With the dust still not settled on the jusen *(housing loan finance companies) problem, the next major debate is already taking shape: should Japan reorganize the way it makes and administers financial policy?*

BY **KAZUO UEDA**, UNIVERSITY OF TOKYO, DEPARTMENT OF ECONOMICS

ARGUMENTS for a restructuring of Japan's financial policy administration are gearing up. There are two reasons for this. The first is that policy-makers clearly bore a large part of the responsibility for the bad-debt crisis. The bubble would not have formed and ruptured had it not been for the extremely easy money policies of the late 1980s and the subsequent tightening. Amidst this cycle, it was quite apparent as early as 1992 that the jusen were in trouble, and had there been an appropriate policy response at that point, the debacle being witnessed today would never have happened.

The second inspiration to calls for reform in financial policy administration stems from deep-seated anti-Ministry of Finance (MOF) feelings that have erupted as the extent of bureaucratic involvement in the jusen fiasco has become known.

It will be the latter that is the easier to deal with. There need to be outside checks on overall policy, not just internal MOF checks. But how to deal with the former?

The ruling coalition has undertaken a "Ministry of Finance Reform Project" and recently announced an outline of its plans, calling for: greater transparency in administration and an end to overly-cozy relations with industry, rigorous accountability, establishment of an independent oversight organization, and revisions to the Bank of Japan Law. Each of these points, and several others as well, requires careful consideration.

The first two points (bringing more rules and therefore more transparency to bear on administration and policy-making while at the same time enforcing the idea of self-responsibility among participants in the financial system) seem desirable enough and not only acceptable but already accepted. However, if the question is reframed to ask whether administration by rules is better than administration by discretion, one will find that no clear consensus exists. Clear rules are better for participants in the system, but at the same time, formulation of a tight set of rules means that one must anticipate any and all events that might occur in the future, and that is obviously impossible.

The problem is that administration as it has been practiced has been extremely opaque to outsiders, so the most realistic option is to take steps to make it more easily understood by all market participants (for example, by informing all participants equally and in writing of any policy changes), while at the same time leaving room for a bit of discretion so that new policies can be added or changes made in administrative practice at a more informal level than statutory amendments. This might take the form of (written) administrative guidance.

PANA

ON GUARD: ***The entryway to the MOF building in Kasumigaseki was, until recently, locked and closely guarded for fear of any expression of anti-MOF sentiment.***

Stronger oversight functions are certainly necessary as administration becomes more market-oriented and shifts from ex-ante regulation to ex-post monitoring, but it is not necessarily clear that this needs to be independent of other administrative agencies. In the US, the Federal Reserve Bank handles a large portion of bank inspection and regulation. In England, the Bank of England performs similar functions. What is important is not who does it so much as that the people responsible for overseeing the financial markets gain more know-how in bank inspection than they currently have and that there be greater incentives for private financial institutions to disclose more information on their internal operations.

The argument about reorganization has extended to the Bank of Japan (BOJ) as well as the MOF. The current Bank of Japan Law was passed as a wartime measure and, as is often pointed out, gave the BOJ relatively little independence. According to a study by Alesina and Summers of the relationship between central bank independence and performance (*Journal of Money, Credit and Banking*, 1993), the BOJ rated a 2.5 on an independence scale of 1 to 4, about average. Nonetheless, if one is willing to ignore large swings in asset prices, its performance has been extremely good—the inflation rate, for example, has been extremely low since the mid 1970s. One wonders then if reform of the BOJ's monetary policy systems is really all that urgent.

But if we are going to reform and we are going to give the BOJ more independence, we should also give it more accountability. When policies fail, we ought to be able to identify exactly who is responsible.

The debate on reorganizing financial administration, including the BOJ issues, is the subject of intense political wrangling. There are large interests at stake. This raises the distinct possibility that reforms will miss the point (which is to adapt the three MOF bureaus in charge of financial issues to the new market-oriented style of administration and to identify whether there is a need to separate fiscal and monetary functions) and be distorted to the extent that government efficiency is actually reduced. We on the sidelines must be vigilant that this does not happen.

GRADING HASHIMOTO

Is Hashimoto's coalition government equipped to deal with the problems facing today's Japan?

BY **YOSHIHIDE SOEYA**, KEIO UNIVERSITY, DEPARTMENT OF POLITICAL SCIENCE

OVER half a year has passed since Ryūtarō Hashimoto was sworn in as Prime Minister of Japan. In that time, the Hashimoto government has addressed a number of serious issues, including the *jusen* (housing loan finance company) fiasco and the downsizing of the US military presence in Okinawa. How has Hashimoto and his government fared?

Many Japanese saw Hashimoto's strong political leadership as the key to the resolution of the Okinawa issue during President Clinton's visit to Japan in April. The two leaders signed an agreement to return the Futenma Marine Corps Air Station in Okinawa to Japan in the next five to ten years. The Hashimoto government's decision to foot the bill of returning the Futenma base to Japan and the transfer of its military functions to other locations in Japan was not a popular one domestically, and required a great deal of determination and political will on Hashimoto's part.

By contrast, Hashimoto chose to keep a low profile on the jusen issue, a problem he inherited from the Murayama government. His wait-and-see strategy paid off when Shinshinto, the country's largest opposition party, agreed in May—after months of protest—to the Hashimoto government's plan to help bail out the failed jusen with ¥685 billion ($6.36 billion) from the nation's general account. Surprisingly, perhaps, the general public and the mass media have not expressed any major objections to the plan. While many Japanese were critical of the government's reluctance to punish those who were directly responsible for the jusen failures, most seem to believe that some form of governmental action was required to solve such a grave economic problem.

On May 15, a spokesman for the Hashimoto Cabinet, Seiroku Kajiyama, announced that Hashimoto may dissolve the Diet and call for national elections under the new electoral system as early as next January. The timing would be expedient for Hashimoto and his Liberal Democratic Party (LDP) because the hike in the national consumption tax (due to take effect next April) will likely result in a popular backlash, lessening the chances that the incumbent government will be reelected. This willingness to call for national elections also reflects the LDP's belief that the public is gaining confidence in the Hashimoto government. However, the LDP may underestimate the extent to which the next election will highlight the fundamental weakness of its coalition government: the fact that it does not have a mandate from the people.

KYODO

ON HIS WAY OUT? ***Does Prime Minister Hashimoto (center) have the popular support he needs to win the next election?***

In August 1993, the Japanese public voted the LDP out of power for the first time in thirty-eight years. The Social Democratic Party (SDP) also suffered badly at the ballot, only managing to survive by joining an anti-LDP coalition under the newly elected Hosokawa government (August 1993 to April 1994).

After the resignation of Prime Minister Hata in June 1994, the LDP and the SDP formed a majority coalition with New Party Sakigake that placed SDP chairman Tomiichi Murayama in the premiership. The LDP strategy was obvious: the Murayama government would serve as an LDP proxy, remaining in office only until the LDP could return to power. The Hashimoto government is merely the latest offspring of this political marriage of convenience.

The fundamental issues confronting today's Japan cannot be addressed by a government without a popular mandate. The national government is on the verge of bankruptcy, the nation's debt to GNP ratio has reached its highest level in post-war history, and social concerns such as the rapid aging of Japanese society are expected to further drain the nation's general account. Meanwhile, the old symbiotic relationship between LDP politicians and government bureaucrats has grown into a source of problems rather than solutions.

The coalition nature of this government is clearly an obstacle to progress in solving the problems facing today's Japan. Any government that tackles these crucial issues must have a mandate from the people.

logic is...

...anticipatory, advanced, and personality driven.

BY **OSAMU KATAYAMA**

EIICHIRŌ IWASA

Kaoru Ishida, President of Logic.

KAORU Ishida, the president of Logic, was one of Japan's first venture businessmen. About the same time Apple Computer was getting its start, he left a large Japanese company to form his own business computer firm, a company that chalked up impressive sales in Europe while the Macintosh was still in its infancy.

"Ever since I was in junior high school I had this desire to create a company that would be strong enough to play a leading role in Japan. When I went to university, I chose to major in engineering precisely because I thought it would be the best route to take to corporate management. You have to understand technology if you want to be a business leader. You can study management techniques and the legal aspects of running a business after you get out of school."

After spending a few years at Mitsubishi Electric, Ishida was sent by the company to study at Westinghouse, a US-based electrical equipment manufacturer with operations around the world. He was chosen from about 400 people who applied to the training program, and that selection virtually assured that he was on an elite course to the company top. But seven and a half years after he joined Mitsubishi Electric, he resigned.

" One of the things that I noticed while I was studying at Westinghouse was that talented young managers there were ordering around engineers that were much older than themselves. I realized that if I didn't get out quick, I'd never become a manager."

It is something of a truism that where the US provides opportunities for relatively young people to be in management positions, Japan's seniority system makes it a long, hard climb to the upper echelons. Having set out to be an entrepreneur from his youth, Ishida found it hard to accept that kind of wait.

After leaving Mitsubishi Electric, Ishida joined Fairchild Japan, the local subsidiary of a US semiconductor company. At Fairchild he served as a bridge between the US and Japan in the microcomputer business. He also had the opportunity to improve his technology and sales skills, so that in 1973, at the age of thirty-six, he was ready to start Logic Systems International.

> "You have to understand technology if you want to be a business leader."
>
> ***Kaoru Ishida, President of Logic***

IN AND OUT OF THE PC MARKET

"While I was at Fairchild, I was eventually put in charge of applied technology for digital ICs [integrated circuits] and made the leader of a project to develop the next generation of microprocessors. At the time, hardware engineers knew nothing about software, and software engineers knew nothing about hardware. What I realized was that there was a market for specialist consultants on microcomputers, and I knew that if I was going to strike out on my own that would be the way to do it."

The next year, 1974, Logic Systems International was officially incorporated and began to expand its operations, only to find itself pinched by the first oil crisis. Ishida went through some dry times. Often he could not even scrape together ¥1,000 ($10). At one point, he sent a letter to a Paris company that he had done business with telling them that his company was designing a circuit that used microprocessors. He received an unexpected reply telling him that "you're the one we've been looking for to start our next business." At the time, pre-Macintosh, computers were little more than glorified calculators, but the Paris company was interested in creating something completely different.

"I immediately bought the cheapest airline ticket I could find and headed to Paris," Ishida recalls.

In 1977 Logic landed an order from the French dealer to develop small, desktop computers.

The "Sanco" series that came out of this was an explosive seller throughout Europe. There was even a knock-down plant for it in Brazil. During its first two years, 800 Sancos were sold, which was enough to put the company on a solid footing. Later, the Sanco was upgraded to the Sanco 7100 personal computer, changing its name to "iBEX" and successfully holding independent shows in Los Angeles and Chicago in an attempt to crack the US market. Logic also started to sell the iBEX to Japanese users, who were beginning to hear rumors about it.

"But after a while we realized that personal computers really weren't the business for us and we got out." Ishida says. "The big Japanese companies were all jumping into the personal computer market and we knew that a small company like ours could never compete with them."

LOGIC AT SEVEN-ELEVEN

Logic switched focus to custom machines and original equipment manufacturing (providing finished products or parts to a customer for sale under the customer's brand). One of its most successful custom products was the point-of-sale (POS) cash registers (systems that manage point-of-sale information, usually by computerizing a store's cash registers and using them to read and interpret bar codes) used by Seven-Eleven Japan. The system that Logic developed was able to keep track of sales and inventories, and even issue restocking orders. It was installed in every Seven-Eleven store in the country.

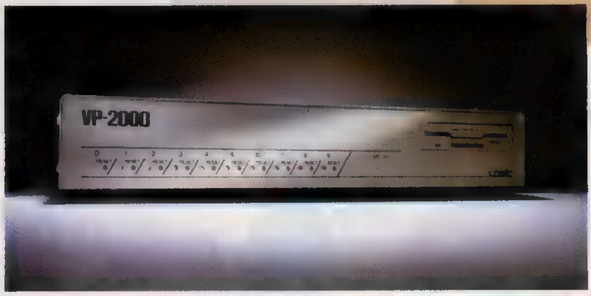
Later, Logic moved into networking.

"Our move into networking was by no means accidental," says Ishida. "Even at the time I started the company I knew that there would come a day when computers and telecommunications were joined together. I used to look at the old black phone in my house and think, 'Someday you're going to be a computer.' So when we were given an order from NTT to build a device that would verify data, we decided not just to verify it but to move it as well. What we ended up creating was a processor to perform packet transmissions [dividing data up into small units called 'packets' and transmitting those packets by set routes to their proper addresses; the system enables multiple information to be transmitted over the same communications link, though an address must be specified for each packet]."

▲ iBEX, Logic's flagship in its successful though short-lived foray into the personal computer market.

▶ Logic's "VAN+" packet processor, released in 1984, was able to perform multiplexed packet exchanges, providing great savings in telephone charges and installation costs.

▼ Logic's custom made POS (point-of-sale) cash register is used by every Seven-Eleven shop in Japan. The system can keep track of sales and inventories, and even issue restocking orders.



◀ The VP-2000, Logic's latest contribution to the world of packet technology.

In 1984, Logic announced "VAN+," its new packet processor. The unit was able to perform multiplexed packet exchanges, a very efficient means of data transmission, and was compatible with machines on both sides regardless of the protocols they used, which resulted in vast savings both in telephone charges and in installation costs.

In 1985, with investment from NTT, Logic established the "NTT-PC Communications" company and began to shift more of its resources in the direction of networking. In its collaboration with NTT, the company began providing electronic mail, bulletin board, and information retrieval and processing services.

In 1988, Logic joined hands with NTT, Toyota Motor, and Ushio Electric to create the "Infonex" company. Infonex's main business was rebuilding its customers' networks into large-scale telecommunications systems. It also provided consulting services in allied fields. More specifically, its market was companies with offices in Tokyo and Osaka that wanted to connect their computers together on internal lines and then transmit data back and forth cheaply over the phone lines.

"I figured the best way to live side by side with big companies was to join hands with them, bringing to the partnership the advanced technology and entrepreneurial spirit that were our strengths."

Logic also tried to differentiate itself from the big companies by adding software technology to computer hardware. In landing orders for VAN (value-added network) systems, it would use its maneuverability as a small company to diversify its business opportunities, providing not only design and configuration, but evaluations of potential equipment to be used, development of software, and even maintenance services.

In other words, Logic shifted from building markets with breakthrough technologies to creating markets by spanning many different sectors to bring together and integrate existing technologies. Technology had progressed to the point that advances could no longer be made by individual companies working on their own. Logic instead added value by working in partnership with other companies to bridge and polish the innovations that had come along.

Says Ishida, "If you watch what is happening, it is not that hard to anticipate what is coming and either acquire the proper technology or develop it yourself. If you have your own technology, I'm confident that you can develop into a strong company. In other words, what we in Japan need to do is to use our own creativity to develop value-added manufacturing. Instead of just buying technology from the US, we need to develop advanced technology in the areas that we are best at."

Logic is currently doing just that. Its latest project is to develop the next stage in packet transmissions, an endeavor that it has twenty talented staff members assigned to on a five-year timetable.

"We think we're one of the best companies anywhere in packet technology. But no matter how good our innovations are, the big companies catch up quickly. That's why we need to develop the kind of original product that the big guys are going to find hard to copy. So far we've specialized in data transmissions and computer networks, but what we're doing now is applying that technology to the processing of audio. I can't really give you the details. All I can say is that it is going to be the most advanced thing in packet technology there is. At the most we might have one or two competitors who are even close to us anywhere in the world. It'll be years before the big companies catch up," says a confident Ishida.

For Logic, being one step ahead of the technology is everything. Ⓛ

The author was born in 1940. He is a freelance journalist and writer on economic and political issues. He has published a series of books on the strategies of top Japanese firms and currently heads K-Office, an editorial production company. His latest book is *Jissen Keiei Kakumei* (Japanese Business Prepares for the 21st Century: Reinventing the Miracle.)

LOVE'S LA

Rumiko Takahashi's "gag" manga transform th

BY **FUSANOS**

RUMIKO Takahashi has been producing hit *manga* (comic books) since the early 1980s. Unlike most female manga artists, however, her specialty is not "girls' manga" (see LJ June) but so-called *gyagu* (gag) manga, a comic genre enjoyed mostly by young men. As one of the few women to have scored a hit in this highly competitive genre, Takahashi has helped pave the way for other female artists interested in genres other than girls' manga.

The stable economic growth of the 1980s set the stage for Takahashi's success. By the time she began publishing her work, Japan had passed through the rapid economic growth of the 1960s and acquired newfound confidence after overcoming the oil crises of the 1970s. A look at the boys' manga from the period shows that the heroes, who had previously sweat it out in heated sporting and martial arts contests, were now devoting their time to the opposite sex. Many of the boys' manga of this period dealt with young love, love triangles, and unrequited love. But these were not serious romance stories; far from it, they were slapstick love comedies. Readers in their teens and twenties gobbled them up.

SHONEN SUNDAY COMICS〈ワイド版〉
うる星やつら
uruseiyatsura
1
高橋留美子
Rumiko Takahashi

Cover to Urusei Yatsura *(noisy guys), book 1.*

© RUMIKO TAKAHASHI / SHOGAKUKAN

Cover to Ranma 1/2 , *book 4.*

© RUMIKO TAKAHASHI / SHOGAKUKAN

Takahashi first made her mark with *Urusei Yatsura* (noisy guys), which headlined the popular weekly *Shonen Sunday* magazine from 1980 to 1987. Set in a high school and featuring a girl from outer space named Ramu and a lazy, inept, and somewhat dirty-minded boy named Ataru Moroboshi, *Urusei Yatsura* is considered by many to be the quintessential love comedy. In 1981, film director Mamoru Oshii turned the manga into a hit animated television series. In 1984, Oshii directed the feature-length animated film *Urusei Yatsura: Byūtifuru Dorīmā* (noisy guys: beautiful dreamer), in which Ramu and Ataru are trapped in "circular time," endlessly attending the same party with friends the night

UGHTER

e trials and tribulations of love into high comedy.

UKE NATSUME

Cover to Mezon Ikkoku *(maison Ikkuko), book 1.*

© RUMIKO TAKAHASHI / SHOGAKUKAN

before the school festival and gradually becoming aware of the oddity and mystery of it all. The film, a smash hit, addressed the vague uneasiness that young people feel about life in a closed society from which they feel there is no easy exit.

During roughly the same period Takahashi's *Mezon Ikkoku* (maison Ikkoku, 1980-1986) was running in another popular boys' magazine, *Big Comic Spirits.* Yet another love comedy, the story centers on a man named Godai, a good-for-nothing who lives in an old apartment building called Mezon Ikkoku, and his relationship with Kyōko, the beautiful young woman who becomes the new manager of the building. Despite a series of misunderstandings and false starts, they eventually fall in love, becoming involved with other residents and forming love triangles along the way. The final scene, when their love finally blossoms, is beautifully touching and generated incredible enthusiasm among Takahashi's readers.

Love comedies are now considered passé, but Takahashi has continued to churn out popular stories for boys' magazines, her *Ranma 1/2* having been particularly well received.

MANGA TRAILBLAZER

Takahashi's work has had an enormous impact on young manga artists of both genders. Manga in Japan have traditionally been separated along gender lines, and "boys' manga" and "girls' manga" eventually developed their own, independent expressionistic techniques. In the mid-1970s, however, the techniques used in girls' manga began to influence the story lines and artwork of boys' manga. Rumiko Takahashi was one of the artists who refined and perfected this new, hybrid style of boys' manga.

Takahashi made her debut while still at university. Before attending university, however, she spent six months at the Gekiga-son Juku manga school. The school, which is run by Kazuo Koike, one of Japan's leading manga story writers, teaches young artists the ins and outs of manga story writing and illustrating. By the late 1970s, manga artists had arrived at set techniques of dramatic development, drawing, and frame composition that were transmitted as "core know-how" for creators of entertainment manga. Takahashi acknowledges that what she learned from Koike helped her to become the successful artist she is today.

Competition in the world of manga is fierce, and even the great authors of the past are unable to sell books on reputation alone. Takahashi is the rare artist who has been able to survive for more than a decade on the leading edge of gag manga, a genre in which most authors have an especially short career.

The author is a well-known cartoonist and essayist. His books include *Kieta Makyū* (the vanishing curveball), *Manga no Yomikata* (how to read manga), and *Tezuka Osamu no Bōken* (the adventures of Osamu Tezuka). Born in 1950, he is a graduate of Aoyama Gakuin University.

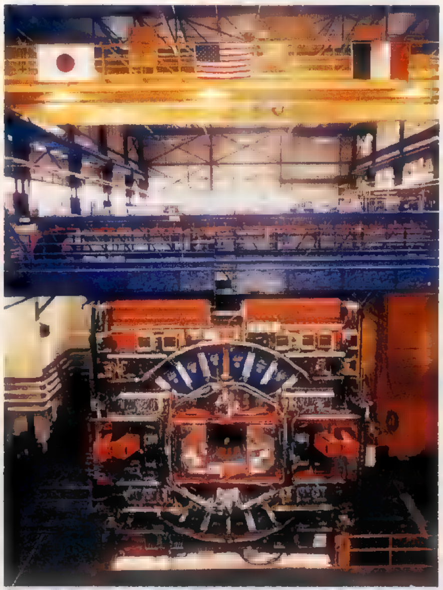
PARTNERS IN ELEMENTARY PARTICLE RESEARCH

Professor Seigi Iwata reviews the history and charts the future of Japan-US cooperation in the world of high-energy physics.

BY **SEIGI IWATA**

HIGH-ENERGY physics is basic science in its purest form. Its goal is to elucidate the most fundamental principles of physics through the study of the elementary particles—the basic building blocks of matter—and the laws of energy which govern them. To do so, it is not enough to simply study the stable particles that now surround us. High-energy physicists must study the many particles that only occur under high-energy conditions such as would have been present at the Big Bang. High-energy particle accelerators are used to artificially recreate the high-energy world where these particles exist. Particle detectors and other experiment apparatuses are used to detect and observe the elementary particles generated by particle accelerators. The US—with its long history in high-energy physics, a field that developed rapidly after the end of World War II—was unsurpassed in terms of the quality and quantity of its research.

Japan quickly became a leader on the theoretical side of high-energy physics research, but it lagged far behind the US and Europe in experimental research, which requires special large-scale facilities and equipment. The first Japanese research teams were only formed in the late 1960s. The first major turning point for this young field of study came in 1971. In that year, construction of the National Laboratory for High Energy Physics (KEK), a national laboratory under the direct control of the Ministry of Education, was begun at Tsukuba, Ibaraki Prefecture. Although the 8-billion-electron volt (8 GeV) proton synchrotron approved as the main research facility at KEK was not the cutting-edge high-energy facility hoped for, it nevertheless represented a revolutionary expansion of Japan's research base. Furthermore, construction of KEK marked Japan's first attempt at providing Japanese researchers with broad access to a large scale "national joint use research facility."



The detector at the Fermi National Accelerator Laboratory, constructed through US/Italy/Japan cooperation (this photo 1988). Standing 9.4 meters tall and weighing 2,000 tons, the detector is used to study particle production by proton-antiproton collisions. The top quark was discovered using this detector.

Fierce competition ensued among Japanese research teams for the opportunity to conduct experiments at the Tsukuba proton synchrotron. Due to the characteristics of high-energy physics, all experiment proposals were both large-scale and long-term. The research environment was not yet adequately equipped to accommodate many such experiments, however, and the facility could not meet the demands of the swiftly burgeoning number of research groups. Furthermore, accelerator energy was not high enough to perform world-competitive particle physics experiments. Even while plans for Japan's next accelerator project (the TRISTAN Project) were being vigorously debated and examined in Japan, more and more Japanese research groups were considering the possibility of participating in joint research programs at high-energy particle accelerators overseas. At the time, the US "Big Three" high-energy physics laboratories—the Brookhaven National Laboratory, the Fermi National Accelerator Laboratory, and the Stanford Linear Accelerator Centers—already had impressive accelerator facilities. At all these facilities, international joint experiments were par for the course and Japan, which by this time had active research teams, had been asked to participate. Unfortunately, none of the interested Japanese teams had means of receiving enough funding to pursue their experiments at the US facilities.

Then, at a summit of the Japan and US heads of state in May 1978, the two countries pledged to work together to tackle the world's energy problems. In the summer of the same year, Tokyo hosted the International Conference on High Energy Physics, the first time in the conference's august history that the meeting was held in Asia. At the conference, the US called for adding high-energy physics to Japan-US cooperation programs. In the wake of this request, at one time as many as six different joint experiments were being seriously examined in Japan with essentially every major Japanese university research group involved on some project. Things moved forward quickly and, in May 1979, the two governments signed an agreement to cooperate over a ten-year period in "research and development in energy and related fields." With that, a Japan-US cooperative program in the field of high-energy physics was initiated.

MUTUALLY BENEFICIAL RESEARCH

The goal of this program is to further develop high-energy physics by working together on mutually beneficial research at the large US accelerators. To achieve this goal, cutting-edge experiments in line with advancements in theoretical physics can be pursued at multiple research facilities. Two major characteristics of this cooperation are that an entire field of study can be dealt with comprehensively, with each research group contributing in its area of expertise, and that the program remains as active as ever, even after 17 years.

The Japan-US agreement on this joint research program was extended in 1990 and 1995, in line with the recommendation from a panel of third-party evaluators. The factors behind the positive development of this program are the many scientific achievements coming out of the cooperation program, the cultivation of many young scientists with international perspectives, and the building of a relationship of trust between the scientists of both countries. KEK is entrusted by the Ministry of Education to serve as the key Japanese institution in Japan-US joint experiments. Individual project plans submitted each year by research groups are reviewed by a Japanese research planning committee. The US/Japan Committee for Cooperation in High Energy Physics, with seats for representatives of both the Japanese Ministry of Education and the US Department of Energy, makes final decisions on the annual research program based on these reviews.

Six joint experiments were carried out during the initial term of the Japan-US cooperation program. The experiments quickly began to yield results at the forefront of physics research mainly from studies of particles containing the charm quark (the just-recently discovered fourth quark), and those including the strange quark (the third quark), and research on phenomena caused by weak interactions of neutrinos.

Meanwhile, Japanese high-energy physics was moving towards its second major turning point, as construction of the world's highest energy electron-positron collider (TRISTAN) was approved by the Japanese government in 1981. Many of the university research groups involved in the Japan-US cooperation program joined in the planning of the TRISTAN facility for the opportunity to conduct research inside Japan at the world's highest energy facility. US research groups soon came on board, forming an international joint experimentation group (made up of American, Japanese, Korean, and Chinese scientists). Now that Japan had its own first-class research facility, international cooperation between Japan and the US was finally a two-way street.

RECENT RESEARCH

Between 1979 and 1995, around 600 scientific papers were published on research that developed out of the Japan-US cooperation program, with over 60 Japanese researchers and over 130 American researchers receiving their doctoral degrees from work on the program. Currently, around 200 Japanese researchers are involved in projects such as those outlined below.

1) The main accelerator at the Fermi National Accelerator Laboratory is the world's highest-energy collider, where protons and antiprotons accelerated to energies of 900 GeV are smashed head on. Here a large group of scientists (CDF) composed mainly of Americans, Italians, and Japanese (primarily from Tsukuba University) spent about the first eight years of the Japan-US cooperation program building an experimental device and since then have been conducting experiments with it.

Signing the meeting record at the 16th Meeting of the US/Japan Committee for Cooperation in High-Energy Physics, held at the Fermi National Accelerator Laboratory, May 25-26, 1994.

The group's device makes it possible to observe elemental particle reactions in the world's highest-energy environment, which in and of itself has resulted in many important findings. Their biggest achievement by far, however, was the discovery in 1995 of the top quark. Since the latter half of the 1970s, scientists around the world had been searching for this elemental particle (the sixth quark), but at no other accelerator had energies been high enough to create the elusive particle. When the mass of the top quark was measured, it turned out to be equivalent to the mass of around 200 protons, far heavier than any of the other five quarks. Understanding the reason for this is the newest challenge facing high-energy physicists.

2) The Stanford Linear Accelerator Center, where electrons are smashed into positrons, can produce enough energy to generate large amounts of Z-particles, the medium for weak interactions. The frequency of Z-particles generation here is less than at the LEP accelerator facility in Europe. However, recently scientists here have been able to use the characteristics of a linear accelerator to adroitly align the spin of electrons. This alone is a great achievement. A large research team called SLD is pursuing experiments at the Stanford facility. The Japanese part of the team is mainly from Tohoku University and Nagoya University. By making judicial use of the facility's unique electron beam, the team is able to carry out research on the decay of Z-particles, something which is impossible at other facilities. Recently, the team has received high praise for achieving the most precise measurements to date of basic physical quantity, which reveals the relationship between electromagnetic interactions and weak interactions.

3) Physicists hope for an electron-positron collider that can reach even higher energy levels in order to bring about innovative developments in the field of high-energy physics. Since ring accelerators generate strong radiation, a linear collider composed of two linear accelerators facing each other is needed. To build such a facility requires accelerator technology of the highest order. Since the completion of the TRISTAN accelerator in 1986, an important theme of Japan-US cooperation has been research and development on accelerators through the joint efforts of KEK and SLAC, the forefather of linear accelerators. So far, this research has produced remarkable findings in the areas of high intensity beam dynamics theories, development of both the world's highest power klystron and a special electron source, and realization of the world's greatest accelerating electric field. Recently, these researchers have reduced the size of a high-energy electron beam to a mere 70 nanometers (around 1/1,000th the width of a hair). This technology for new accelerators, once thought to be only the stuff of dreams, is actually being produced. The construction of a next-generation accelerator has reached the total system design stage.

Preparations for still more projects under the Japan-US cooperation program are moving forward and many more findings are expected in the near future.

The author is a professor at the National Laboratory for High Energy Physics. He was born in 1942 and graduated from the Faculty of Science at Tohoku University in 1964.

PRECISION IN A TINY W R

EIICHIRŌ IWASA

A look at the pioneering work of Shōichirō Yoshida in the world of engineering on the molecular scale.

BY **AKIO ETORI**

> **"It's time that technology and products with a Japanese face began to emerge. We are pursuing precision technology as one example of how that can be done. But there are other fields that are important too, like environment and energy conservation technologies. Ultimately, we need to raise technology to the level of culture."**
>
> *—Shōichirō Yoshida*

NEW technology is the product of persistent work by brilliant minds. It can also be the product of coincidence, or good timing. The research and development of ultraprecision machinery, for example, depended upon and was catalyzed by the boom in the Japanese semiconductor industry. Shōichirō Yoshida will attest to that.

Yoshida graduated in precision engineering from the University of Tokyo. He joined the corporate giant Nippon Kogaku Kogyo (now Nikon), and in 1960 became involved in some of the world's most advanced research in the field of ultraprecision technology. His goal: to create a new version of the ruling engine, an ultraprecision machine used in the production of diffraction grating (a system of close equidistant and parallel lines ruled on a polished surface to produce spectra by diffraction.)

The ruling engine uses diamonds to cut thousands of grooves across minute areas in the surface of glass or polished metal. The instrument must maintain a precise gap between the grooves of less than one thousandth of a centimeter. The technology took Yoshida and his team about ten years to perfect, but the research laid the ground-work for his future contributions to the development of ultraprecision machinery and measuring equipment.

"Ruling engines are the grandfather of precision machinery," says Yoshida. "They've been around in one form or another for over a hundred years, but suddenly it seems that everyone is studying them. Researchers at Mount Wilson Observatory at Johns Hopkins University, for example, are now conducting a ruling-engine study.

"In 1968, I traveled to the US to take a look at some of the ruling engines there. The one that impressed me the most was at the MIT [Massachusetts Institute of Technology] laboratories. The key to ruling engines is drawing a straight guide and finding a reliable technique for cutting. MIT was using laser interference meters for positioning. Lasers had only just come out at the time.

"We had used mercury-based interference meters for our first ruling engine, but we switched to laser interference meters for the second. At the time, this was a completely domestic technology, and my research was given a lot of support by Professor Haruo Ōtsuka of the Optical Laboratories at the Education University (now Tsukuba University) and Masao Nagaoka, who was the president of Nikon at the time."

Just as Yoshida's research was bearing fruit, the demand for ultraprecision measuring equipment skyrocketed with the birth of the semiconductor industry.

THE WORLD GETS SMALLER

In the course of his career, Yoshida has gone from work in the world of the micron (one millionth of a meter) to the world of the nanometer (one billionth of a meter).

One of the most significant products of his research was the "stepper," the machine that burns detailed patterns into VLSI (very large scale integrated circuits) chips. As integrated circuits become more dense (they can contain upwards of 100,000 elements), they must be made with greater and greater precision. Fifteen years ago, the pattern for a 64K DRAM chip required a resolution of about 2.5 microns. Today, a 64M DRAM requires a resolution of 0.35 microns; a 1G DRAM, 0.18 microns.

Says Yoshida, "Some time in the twenty-first century, ultraprecision machinery will be so advanced that we will be able to build steppers that can transfer patterns with line widths of only a few dozen nanometers."

Yoshida completed Japan's first stepper ahead of the other precision machinery companies in the semiconductor industry. In 1985, in recognition of his achievements, he was put in charge of the "Yoshida Nano-structures Project" for creative science, sponsored by the Research Development Corporation of Japan.

"Our goal is to investigate the basic technologies that will be needed to work in the molecular-scale realm of the nanometer. Specifically, our goal is to improve the precision of stepper control to the point where we can work on the scale of tens of nanometers, or maybe even just a few nanometers. At this level, we will need to utilize technologies with shorter wavelength X-rays and electron

LD

beams. It will be a while before we are able to make practicable X-ray steppers, but we are studying X-ray optical elements with the goal of using X-ray steppers at some point in the future."

When the Nano-structures Project was completed in 1990, the team held a meeting in the UK to announce the results. They caused quite a stir. Says Yoshida, "Japan has a reputation for contributing little to basic research, but we wanted to be as open with our ideas as possible. That's why we invited researchers from around the world to attend that meeting.

"The research we carried out with the Research Development Corporation of Japan was, I think, quite revolutionary for Japan. Researchers were able to distance themselves from their companies to a fair extent, and everyone went about their research as private individuals: their findings were their own. When you research in a company, you have to be concerned with development schedules and team work. This project depended on individuals, so they were willing to work all hours for days on end to achieve their goals. They forgot all about time and concentrated on their research."

However, it was hard for Yoshida to coordinate his responsibilities as project leader with his commitments to his company. He spent his weekends in Tsukuba working on the project, and only attended project meetings after his day's work at Nikon was over.

"Several years ago, Nikon put together a project to build itself a corporate identity. In our endeavors to crystallize what the principles were that guided the company, we came up with two key words: 'light' and 'micro.' On the one hand, we wanted to stick with the optical technology that we had developed so far; on the other, we wanted to move into ultra-precision technologies like steppers. Our concept, our 'banner' if you like, was to make those technologies the base from which to build products that would satisfy the needs of society."

EVER THE SCIENTIST

Yoshida no longer works in the laboratory. As vice-president of Nikon it is his job to oversee technology development. Still, he is ever the scientist and passionate about his work.

Yoshida's keen interest in science stems from his childhood. His best subjects at school, he says, were mathematics and science. As a sixth grader at a school run by what is now Tsukuba University, just as World War II was drawing to an end, Yoshida was chosen for an experimental "special science class."

"It was elite wartime education and an unrivaled entry point into the Japanese science world. Sixty junior-high-school students were sent to Kanazawa and accommodated in a dorm for the old 'High School No. 4' run by Kanazawa University. We were taught by some of the top teachers in the country, and we'd often get visits from famous scientists.

Those experiences were no doubt a part of Yoshida's decision to study engineering. He decided to major in precision engineering, an interdisciplinary major compared to the more narrow categories of "maritime engineering" or "mechanical engineering" for example. Precision engineering attracted Yoshida precisely because it tried to span all fields, including electrical and mechanical studies, and sought to make them more efficient.

"This interdisciplinary approach is still a part of me. In essence, it is what made nanotechnology a success. I think it's time that technology and products with a Japanese face began to emerge. We are pursuing precision technology as one example of how that can be done. But there are other fields that are important too, like environment and energy conservation technologies. Ultimately, we need to raise technology to the level of culture."

The author majored in science history and science philosophy at the University of Tokyo (1958), and from 1958-1970 worked for private TV stations as the producer or director of science programs. He is a now the executive director and editor of Mita Press. His publications include *Chōdendō wa Butsurigaku wo Kaeruka* (does superconductivity change physics?).

DATA BOX SCI-TECH

■ Degrading polystyrene waste Large amounts of polystyrene (a type of plastic) are used for Styrofoam packing material and packaging material for food. As anyone who has ever unwrapped a computer knows, polystyrene makes for a lot of waste. Currently, most recovered polystyrene is reused in such products as toys and stationery, but as the amount of waste polystyrene continues to increase, and with the "Container and Packaging Waste Recycling Law" (businesses making and using Styrofoam will be responsible for its recovery and reuse) due to take effect next year, the pressure is on to find better recycling methods. Scientists have been researching a method that not only reuses polystyrene, but also breaks it down into the raw styrene monomer that it is made from, and a method which enables recycling at the waste site so that waste polystyrene does not have to be hauled to special recycling facilities.

Scientists have reported that when polystyrene undergoes thermal degradation at temperatures over 600 degrees Celsius, about 60 percent of the polystyrene is converted to reusable styrene. Professor Akifumi Ueno of Shizuoka University's Department of Engineering hypothesized that the recovery rate could be increased by adding an appropriate catalyst to the polystyrene. Ueno found the solid base barium oxide to be the most effective substance for catalyzing the polystyrene thermal degradation process.

Barium oxide powder was incorporated into the raw polystyrene as it was being molded into a thin film. When this film was heated to 350 degrees Celsius, 90 percent was recovered in the form of styrene. Styrofoam made from this polystyrene film broke down into styrene in the same way. Due to the relatively low temperatures needed for thermal degradation of polystyrene with the catalyst, the raw material can be recovered without damage.

With this catalytic preparation of polystyrene, waste polystyrene can be recycled on-site in a simple thermal degradation furnace, making polystyrene a material with a low recycling cost. Research into the practical implementation of this technique continues.

PLASTIC FROM THE SUN AND CO_2

Scientists at Japan's National Institute of Bioscience and Human Technology are attempting to produce PHB, the main ingredient of biodegradable plastics, from solar energy and CO_2, using cyanobacteria.

BY **YASUO ASADA**

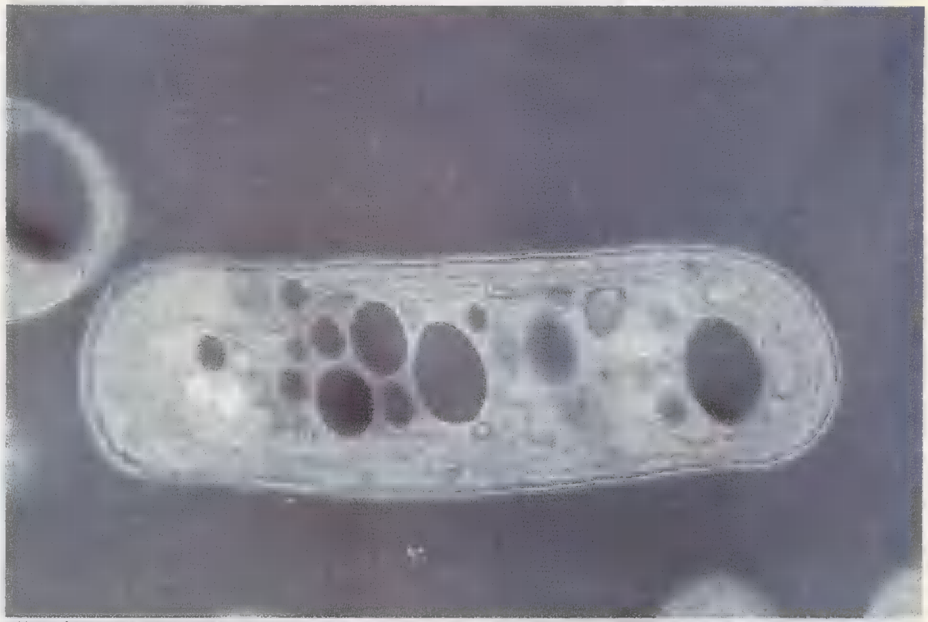
FEW scientists disagree that the ever increasing level of CO_2 in the earth's atmosphere is having a debilitating effect on the global environment, most obviously through the greenhouse effect. Breakthroughs to check further increases in atmospheric CO_2 concentration are vital. One promising field of research in this area focuses on the commercial fixing of CO_2 gas through the biological process of photosynthesis.

One of the byproducts of this process is polyhydroxylbutylate (PHB), the main ingredient of biodegradable plastics. PHB is a cellular storage material synthesized by bacteria. When extracted from cells and molded, this substance has the properties of a thermoplastic similar to polystyrene, yet it can be broken down by microorganisms living in the soil.

Some PHB has been produced on a test basis by culturing bacteria in a glucose media. My colleagues and I at the National Institute of Bioscience and Human Technology (NIBHT), on the other hand, are attempting to produce PHB directly from solar energy and CO_2, using cyanobacteria. Cyanobacteria, or blue-green algae, are the most basic of organisms, but like higher plants they are photosynthetic, meaning they fix CO_2, releasing oxygen as a byproduct. From the bacteria *Alcaligenes eutrophus*, which is known to produce PHB from glucose, we have isolated the gene that codes for the three enzymes used in PHB synthesis.

After reproducing the gene in the bacteria *Escherichia coli*, we introduced it into the cyanobacteria *Synechococcus*. We then transferred the now transgenic cyanobacteria to a culture medium (comprising only inorganic salts like phosphate and nitrate) and left them to grow in the presence of light and air of 2% to 3% CO_2. When the nitrogen source in the medium (nitrate) was reduced, PHB accounted for around 3% of the dry weight of the recombinant cyanobacteria. The picture above shows cyanobacteria grown in the presence of acetic acid. In this case, the accumulation of PHB (the large white granules) rose to 25%.

Our goal is to produce a large yield of PHB from CO_2 without the use of acetic acid. Although the enzymes from *A. eutrophus* that code for PHB synthesis are working inside the recombinant cyanobacteria, the sugars the cyanobacteria are producing by reducing atmospheric CO_2 tend to be stored as cyanobacterial starch, which is their own cellular storage material, rather than PHB. We will have to experiment with growing conditions and new gene manipulations to alter the recombinant cyanobacteria's metabolism so that greater quantities of PHB will be stored.

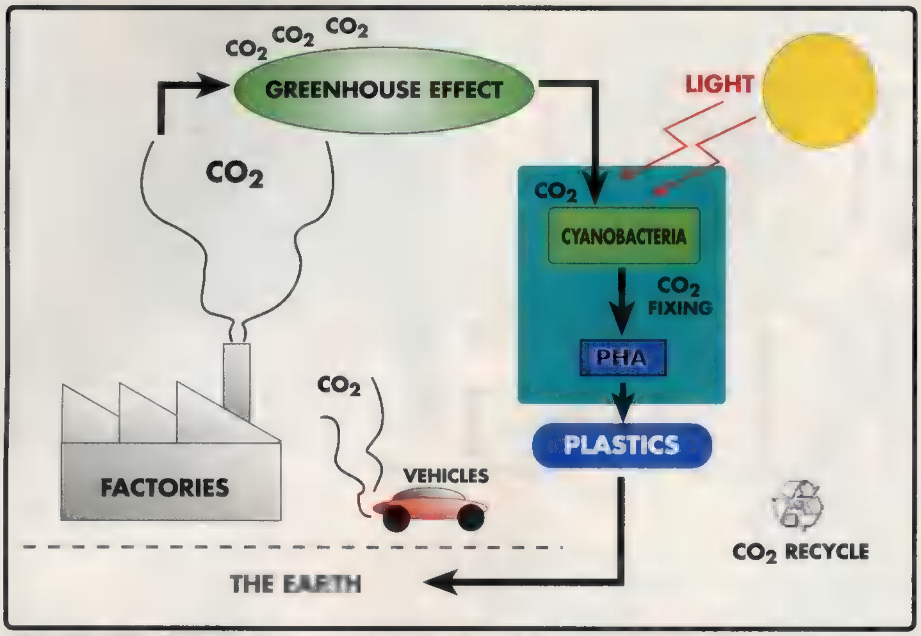


ENVIRONMENT-FRIENDLY: *Grown in the presence of acetic acid, cyanobacteria produces large amounts of PHB (the white granules).*

FUTURE STRATEGIES

Recently, we have isolated a strain of thermophilic cyanobacteria which accumulates large amounts of PHB. When cultured in light at 50 degrees Celsius, this strain rapidly multiplies, doubling its cell numbers in approximately five hours. Without any genetic manipulation or addition of acetic acid, this strain accumulated over 20% of its dry weight in PHB when raised on a medium that was low in nitrogen. We are currently investigating why this particular strain stores so much PHB. We are also involved in preparatory work for the future genetic manipulation of thermophilic cyanobacteria.

Researchers are now trying to introduce the gene for PHB synthesis into higher plants, as a method of producing biodegradable plastic through photosynthesis. The benefits of using higher plants are manifold, the most obvious being ease of cultivation. Only a limited



HOW IT'S DONE: ***Producing biodegradable plastics through the natural process of photosynthesis.***

number of large-scale microscopic algae culturing factories are currently in operation, mainly producing health food products. However, productivity in this system is by no means low. In an example of raising the Spirulina algae in low latitude regions, an annual harvest of PHB of approximately 16 grams (total dry cell weight) per day per square meter has been reported. Unfortunately we don't have good data on production costs and cannot address the question of what percentage of the dry weight would have to be PHB to make such an operation profitable. If, however, a large-scale production system for microscopic algae was put on line with the attendant goal of reducing CO_2 levels in the atmosphere, PHB would surely be placed at the top of the list of useful byproducts.

Some of the NIBHT team's findings were obtained while participating on the RITE (Research Institute for Innovative Technology for the Earth) project "Research and Development of Biodegradable Plastics," which was commissioned by the New Energy and Industrial Technology Development Organization. RITE, which is sponsored by the Ministry of International Trade and Industry, promotes many projects concerned with the global environment, including biological CO_2 fixation, chemical CO_2 fixation, and environmentally-friendly hydrogen production.

The author is the chief of the Molecular Bioenergetics Laboratory in the Biomolecular Engineering Department of the National Institute of Bioscience and Human Technology. Born in 1948, he is a graduate of the Faculty of Engineering at Osaka University. In 1990, he earned a degree in agriculture from the University of Osaka Prefecture.

DATA BOX
NEW PRODUCTS

■ **What's in a stub?** Roughly sixty-five meters, according to Platinum Pen Corporated, the manufacturers of a new waste-saving mechanical pencil called the "ZeroShin." Employing a unique two-chuck combination construction—one chuck holds the graphite and the other chuck moves it on—the ZeroShin reduces the wasted 12.4 millimeter stub-length of Platinum Pen's current model (it falls out of the chuck) by 11.4 millimeters. Platinum Pen reports that 11.4 millimeters of pencil can draw a line approximately 65 meters in length.

The ZeroShin uses a graphite core that is 0.5 millimeters in diameter. Available in black, green, blue, red, gray, pink, light green, and light blue, ZeroShin is fitted with an eraser and a rubber grip that pleases the fingers. It costs ¥500 ($4.75). Platinum Pen is also retailing ballpoints with the same design. For more details, telephone: 81-3-3835-4530.

■ **Lines (de) composed...** Fishing is one of the biggest growth areas in Japan's leisure industry, with nearly 20 million people enjoying the sport at least ten times a year (Leisure Development Center, 1995). Unfortunately, the large number of fishermen has given rise to some serious environmental problems. These include deterioration in the quality of water, the destruction (overfishing) of natural fishing areas, and injury to birds and other animals when they become entangled in fishing line. Toray Industries' new biodegradable fishing line, called "Field Mate," is a solution to this third problem.

"Field Mate" is made of biodegradable polyester, meaning it will break down into carbon dioxide and water due to the enzyme action of the microorganisms that live in fresh water, seawater, and the soil. According to experiments conducted by Toray Industries, the fishing line completely broke down in compost containing relatively large amounts of bacteria within 42 days. Left to decompose in fresh water, the fishing line had no breaking strain after three months. Left in seawater, the breaking strain of the fishing line decreased to 25% after four months.

"Field Mate," which comes in 0.310mm (breaking strain 8lb), 0.330mm (10lb), and 0.370 mm (12lb) diameters, is 20 to 30 percent thicker than other brands of line with the same breaking strain. The 100-meter rolls are each priced at ¥1,500 ($14).

For more information, telephone Toray Industries at 81-6-445-3401. **KA**

The SHŌGI KING

At just twenty-five years of age, Yoshiharu Habu may well be the greatest shōgi *player in the history of the game.*

BY **HIROHIKO SUZUKI**

ON February 14, at exactly 5:06pm, twenty-five-year-old Yoshiharu Habu became the first person in the history of *shōgi* (a Japanese form of chess) to capture all seven of the game's major titles in one season. He also became one of Japan's biggest stars. For weeks afterward, Habu was everywhere in the Japanese media. Radio, television, and everything from the lowest-brow sports dailies to the highest-brow news journals enthused about his capturing the *nanakan*, or Septuple Crown. Even the government got in on the act, with Prime Minister Hashimoto awarding Habu the Prime Minister's Award for outstanding achievement, the first time a shōgi master has ever been so honored.

The Japanese media love the word *tensai* (genius), and Habu certainly exhibits all the makings of one. He began playing shōgi at the age of seven, made his professional debut at fifteen, and won his first title at nineteen. Despite his young age, Habu exhibits a very calm and placid demeanor, even in the most high-pressure games. In the course of capturing the seven titles, Habu racked up a record 46 wins against only 9 losses: a win rate of over 80 percent, by far the highest on record.

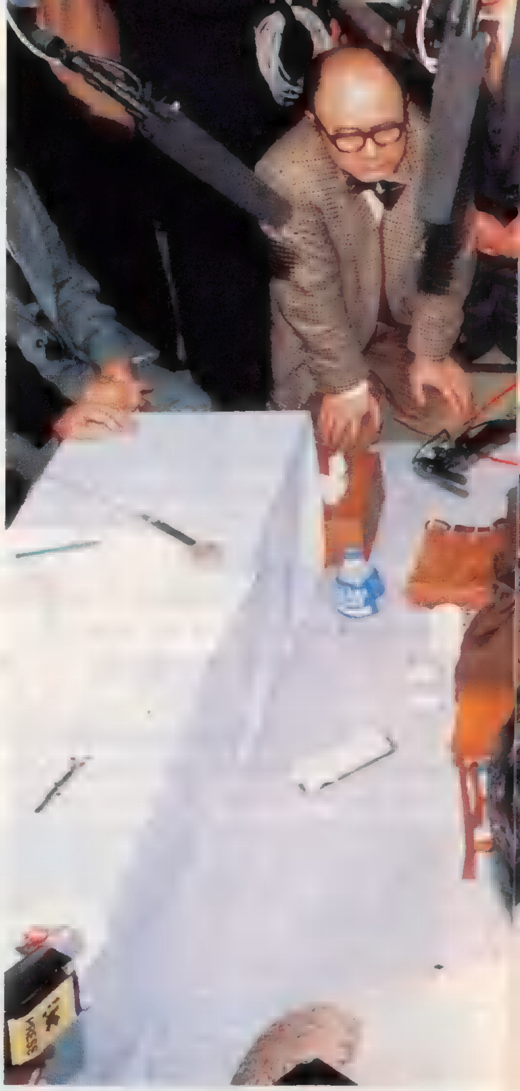
What makes winning the Septuple Crown so remarkable? To answer that requires a look at the Japan Shōgi Association, the nonprofit organization dedicated to training young shōgi players. There are currently about 140 professional shōgi masters registered with the Association, and another 100 between the ages of ten and thirty who are studying to become masters. As the only organization for professional shōgi players, the Association is able to take good care of its registered members, paying them a monthly stipend in addition to match fees and prize money.

The Association's main source of income is the royalties it receives from the media. Each of Japan's big newspapers has a contract with the Association that entitles it to cover certain games, or title matches. There are currently seven titles that a shōgi master can aspire to: the Ryūōsen, Meijinsen, Kiseisen, Ōisen, Ōzasen, Kiōsen, and Ōshōsen. Champions are required to defend their titles against challengers once a year in a five- or seven-round match.

To challenge a reigning champion, a player must first win a series of qualifying tournaments. With 140 professionals engaged in vigorous competition, winning even a single title is no easy feat. Shōgi titles go back about sixty years, with the seventh title being created only about twenty years ago. During that period, a few shōgi masters have held four or five titles simultaneously, but no one has ever held all seven. Not until Habu.

EIHAN NAKANO

NERVES OF STEEL: ***Habu contemplates a move.***



AN ANCIENT TRADITION

Shōgi is played on a wooden board with a grid of 81 squares. Each player has 20 pieces of 8 varieties, each with their own moves, values, and strengths. The game is similar to (and some say more complex than) chess, which is played on a grid of 64 squares, with 16 pieces of 6 varieties. Shōgi pieces (which are flat and have an irregular pentagonal shape) are distinguished by their size and the Chinese characters written on their surfaces.

The prototype of shōgi is thought to have originated in ancient India, near what is now Abadan, Iran. From there the game made its way west to Europe via Persia, evolving into what is known today as chess. The game also made its way east to China, where it evolved into what is known today as *xiangqi*. It was probably first introduced to Japan in the Nara period (710-794) by Japanese envoys who were sent to China during the Tang dynasty (618-907).

The object of shōgi, as in chess, is to checkmate the opponent's king.

PANA

LIMELIGHT: *Habu talks through the moves with reporters after winning his seventh title.*

Indeed, the two games share many common rules. In shōgi, however, once a piece is captured it may be added to one's own forces. This has the effect of widening the range of possible moves and strategies available to the player as the game progresses. That is why professional shōgi players are more likely to make bad moves than are their counterparts in chess. In professional matches, this leads to a great deal of psychological pressure being brought to bear on and by one's opponents. The great champions of the past have not just been fine technicians, they have also been masters of psychological strategy. Habu is widely regarded as a genius at it.

Shōgi is a hide-bound world and its study is extremely formalized, but even when he was young, Habu was cavalier about convention. For example, there is a rule that junior shōgi players should arrive at a competition first and sit in a less prestigious seat than senior players. Aspiring shōgi players are admonished to study records of famous games played by their seniors. Habu did little of either. Even when playing against masters he was given to yawning unabashedly. Rather than pouring through dusty records of the old masters, he studies only that information that he feels is essential, and uses a personal computer to make his studies more efficient.

The most important thing about Habu-style shōgi is that it is played freely and creatively, without regard to established patterns of thought. He places very little credence in the "wisdom" and "common sense" contained in the tomes of past masters, which is why he has been able to develop an array of revolutionary techniques.

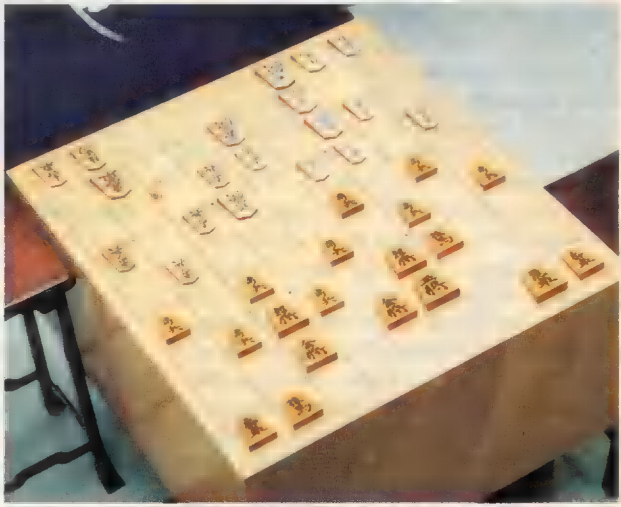
Pundits have tried to explain Habu's strength from several angles: memory, cognitive skills, information processing capacity, concentration, and decisiveness. Certainly, Habu excels in all of these areas. A crucial factor in all of these, I think, is the home environment in which he grew up.

BECOMING A MASTER

Habu was born on September 27, 1970, the first son of a Tokorozawa, Saitama salaryman. His father, Seiji, and his mother, Hatsu, met while working for DuPont, a foreign chemicals concern. Hatsu joined the company as a secretary, but at the time of her marriage (before which she quit the company) she was involved in customs clearance work for imported products. Seiji has changed companies several times and is now in the engineering section of a German steel company.

Habu's development was clearly affected by his parents' lifestyle. His father's experience of working with foreign companies that demanded rational and specialized styles of work, and the fact that his mother had highly specialized business skills of her own, were surely influential on Habu's own outlook on life.

Seiji's advice to his son was, "If you find yourself at a dead end in your work, clean your office." In other words: order breeds creativity. Even when he was small, Habu's mother would refer to him with others as *kare* (he) rather than by his name, which would be the more usual way of speaking in Japan.



COURTESY OF JAPAN SHOGI ASSOCIATION

SOME SAY IT'S TOUGHER THAN CHESS: *Each player has 20 pieces of 8 varieties, each with its own moves, value, and strength.*

Habu is known as the man who brought the computer to shōgi research—or, at least, as the first shōgi master to use computers without resistance. His parents' influence no doubt played a part in his acceptance of what to others may seem out of place or too modern for the traditional world of shōgi.

One interesting statistic about Habu's powers of concentration is that he loses between two and three kilograms of weight during a match. Shōgi is a far more physical game than it appears. A professional match starting at 10:00am will finish in the evening if it is a quick one, but it is not unusual for a match to go into the wee hours of the next morning. With thirteen-hour games being commonplace, shōgi is not for the physically frail. There are meal breaks along the way, but nobody has much of an appetite during the heat of battle, so most players lose weight. Few, however, lose as much as three kilograms.

Habu moves around a lot while he is playing. He will cross his legs, sit up on his knees, formal-style, stretch his back, play with his fan, and sometimes just stare at his opponent. His flitting around during games is a reflection of his mental exertion and likely helps to increase his concentration.

THE RIGHT BRAIN FOR THE JOB

Experts have studied Habu's brain to try to find a window into his particular genius. The left side of the human brain is generally thought to contain linguistic functions; the right, image functions. Indeed the linguistic cortex is located on the left side for over 90 percent of all right-handers and 70 percent of all left-handers. The right side, not having a linguistic cortex, takes care of image recognition. It is the right side that plays the lead in appreciation of painting and music and recognition of patterns. The right side also has significantly faster processing speeds than the left, which is why people are instantaneously able to recognize faces.

The first person to study shōgi players' brains was the late Dr. Yoshiya Shinagawa of Nippon Medical School, a noted authority on neurophysiology and right-brain functions. Dr. Shinagawa sees the special skills of shōgi players as a good example of right-brain functions.

Six years ago, several shōgi masters were called into Nippon Medical School to play matches. Dr. Shinagawa monitored their brain waves and found that almost all of them used their right brains during the match, though each used it to varying degrees. The average master used his right brain for about a third of the match, but Habu used his for three-quarters of the match. Thus, Habu's thought processes involve images that make full use of right-brain strengths.

Habu says that when the end of the game approaches he can instantly see dozens of moves ahead. He does not anticipate what his opponent will do, he simply sees the game. This is a classic example of right-brain thinking. Professionals must compete under time constraints, so it is easy to see that the better one's skills at right-brain thinking the stronger a player's game.

PANA

NEWLYWEDS: *Habu's marriage to the actress Rie Hatada cast the young champion even further into the limelight.*

A NEW BREED OF JAPANESE

Habu married the actress Rie Hatada in March of this year, but true to form, their reception was anything but ordinary. The conventional Japanese wedding reception has lots of relatives and coworkers in attendance, with an endless stream of speeches and well-wishing. The Habus invited only their closest friends and business associates to their reception. Dull speeches and toasts were banned, and the food was served party-style.

Those in attendance were at first taken aback by the breach of custom, but as time passed they became used to, and even began to enjoy, the atmosphere of the reception. Benches were set up in the spacious gardens of the restaurant where the bride and groom conversed with their guests. Habu himself made all the arrangements.

Habu is known as the iconoclast of shōgi strategy, but the revolutionary techniques that he has developed are not something the average man on the street could ever hope to fully grasp. Like sumo, shōgi is an important part of Japan's cultural identity. The emergence of a new type of Japanese in this most traditional and formalized of worlds has both shocked and delighted the Japanese public.

Born in 1956, the author is a graduate of Waseda University and a free lance writer on shōgi. His publications include *Hajimete no Hito ni Yokuwakaru Shōgi* (shōgi for beginners) and *Itte no Kishū Shōgi Nyūmon* (introduction to shōgi strategy).

FIRM FOUNDATIONS

With its "four pillars" presence in Japan, General Electric (GE) is on solid ground in a number of local markets, including appliances, medical systems, plastics, power systems, and, most recently, capital services.

How important is the Japanese market to GE?

JAY F. LAPIN: The Japanese market is extremely important to GE. Our sales in Japan now exceed our sales in Canada, which had long been our biggest customer outside the US. Jack Welch, GE's CEO, speaks about "the four pillars" of our presence in the Japanese market. The first is the market itself, which is large and attractive, but also very demanding. Mr. Welch's view is that success in the Japanese market will make us a much stronger competitor throughout the world.

The second pillar is technology exchange. We have a number of technology exchange programs with Japanese companies, programs which are beneficial to everyone involved.

The third pillar is what Mr. Welch calls "the university of process." We believe that Japan has truly excellent business processes of all sorts—in particular its quality processes and manufacturing processes, but also the ways Japanese companies have enhanced the participation of their employees, giving them a stake in the overall operations of the company.

The fourth pillar is infrastructure finance. Japan, through its overseas development assistance and loans via the Import-Export Bank, is the leading financial supporter of the development of infrastructure around the world—from roads and bridges to power stations and railways. We're very interested in this because we make power generation equipment and railroad engines. Another reason why GE is here is to keep a finger on the pulse of Japanese financing, and—on some occasions—to work with Japanese companies and institutions to obtain financing for our customers and projects around the world.

How has Japan's ongoing recession affected your operations?

JL: In terms of imports, *endaka* [the high yen] has given us a cost advantage over our domestic competitors, and we're benefiting from the fact that more Japanese companies are interested in sourcing from outside Japan. However, an even larger part of GE's presence in Japan is our Japanese-based businesses. We have very substantial investments in Japan in medical systems and in what we call "engineered materials"—high-end plastics that can be used in place of metal in computers and automobiles, for instance. As domestic businesses, they have—like all Japanese businesses—had to overcome the effects of the high yen. On the other hand, our domestic businesses benefit from being linked to GE's global supply and distribution network, which helps them grow their markets outside Japan and improve their productivity by sourcing around the world to get the lowest cost materials and products into their factories.

What is the most significant change taking place in the Japanese market today?

JL: What can only be described as a revolution in distribution is currently underway in Japan. Large, powerful retailers are now focusing on serving the consumer, exerting back-pressure on the manufacturing sector and ushering in the kind of demand-driven economy that's been typical in the US for the last twenty or thirty years. Mass merchandisers like Kojima [a major distributor of GE appliances] are now willing to deal directly with American or European companies, minimize the middlemen, and sell imported products to Japanese consumers at a very attractive price. The emergence and growth of such firms has to be the most significant change we've seen in the Japanese market in at least the past four years.

Jay F. Lapin (50) is president and CEO of General Electric Japan. A graduate of Harvard Law School, he practiced law in Washington, D.C. for twenty years before joining GE in 1989. He assumed his current post in February 1995.

TADASHI AIZAWA

What do you consider to be the most important element of doing business in Japan?

JL: That's difficult, because business in Japan is in flux. Twenty-five years ago, my answer would have been: "You need a partner. Relationships are everything in Japan." GE has many excellent partnerships in Japan—some of the best company to company relationships in the world. Relationships are still very important, but GE is now successful in several businesses without having a formal joint venture with a Japanese partner. You have to understand the market and localize your operations. You don't have to function like a traditional Japanese company to succeed in Japan, but you do have to be sensitive to Japanese sensibilities. That doesn't mean that you shouldn't bring to Japan the things that made you successful in other markets; you should. Striking a balance is the most important thing—a balance between respecting Japanese culture and business practices, and your own drive and creativity. I don't know what the secret to success is. I'm still learning. All I know is that it's a very exciting market and there's a lot of opportunity for GE here.

BY **MICHAEL JUDGE**
WITH **RYŪKO IIKUBO**

Cultural Exchange for a NEW JAPAN

"Japanese culture is influencing—and being influenced by—more cultures today than at any other time in history."

BY **TADAKATSU SANO**

I spent this year's "Golden Week" holiday (the first week in May) on a work assignment in Europe. After attending a conference in Paris, I went by train to Geneva via Lyon. It was France's most beautiful season, with white horse-chestnut flowers blooming along the boulevards of Paris. Driving through the countryside, vivid yellow rape blossoms caught my eye, reminding me of a lyric from an old Japanese folk song: *nanohana batake ni iri hi usure* (sunshine melting in the rape-flower bed).

Geneva was warm and sunny, and I enjoyed a peaceful weekend on Lake Léman. Although there was still snow in the Jura Mountains, spring had arrived and flowers were blooming in chaotic profusion. In particular, the purple wisteria and a certain dark peach-colored blossom caught my eye. The latter reminded me of Japanese cherry blossoms.

One evening I was invited to dinner by some American friends who originally hailed from Switzerland. Their house was located in the countryside about twenty minutes outside of Geneva in a Swiss village just across from the French town of Divonne. That night, while savoring the lengthy twilight, I complimented my hosts on the beauty and variety of their garden. I was surprised to learn that the large chocolate-colored tree in the center of the garden was a Japanese maple tree, and that the dark peach-colored flowers (the same flowers I had seen on my way to Geneva) were called "Japanish cherry" in German. While I was aware that Japan has over 400 varieties of cherry tree, many of which have been shared with other parts of the world—the someiyoshino cherry trees in Washington, D.C. being a famous example—I was not aware that there was a genus of Japanese cherry tree in Germany.

KARAOKE AND BUSINESS CARDS

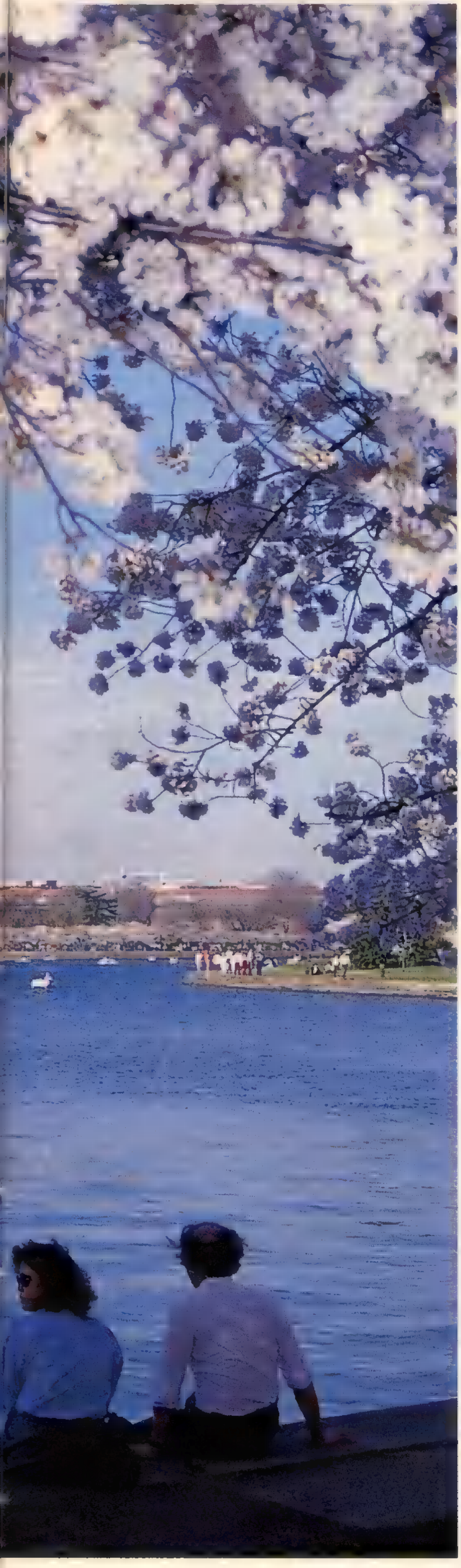
It is often said that while Japan might be an economic superpower, it exports relatively little in terms of culture. However, besides the flora I have mentioned, there are many recent examples of cultural exchange between Japan and other countries. Karaoke, for example, is now enjoyed by millions of people throughout the world.

Karaoke is almost as popular in South Korea as it is in Japan, and in China many families are in the habit of singing karaoke before dinner. Even the French, who are said to dislike singing, are getting in on the act. In many western countries, signs featuring the Japanese word *karaoke* are now a common sight.

In China, the word *karaoke* is written *kara OK*. This might lead some to believe that karaoke comes from the US. The truth of the matter is, of course, that *kara* (empty) *oke* (orchestra) originated in Japan.

In the last decade or so, it has become common practice for businesspeople from all parts of the world to exchange business cards when they meet, a gesture that was once almost exclusively practiced by Japanese salarymen. Business cards are a convenient way to learn someone's title and contact address, though they do tend

BRANCHING OUT *The someiyoshino cherry trees in Washington, D.C. are just one example of how Japanese culture is spreading to other parts of the world.*



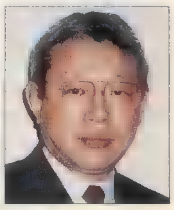
PANA

to add up rapidly. Business cards used to come in different sizes, but these days almost all of them are about the size of a credit card. As far as I know, business cards have been that size from the outset, which would suggest that the cards you have in your wallet are in fact a Japanese styling.

Throughout history there have been both "strong" and "weak" cultures. Europe, the US, and China have long been the world's strongest cultural spheres of influence. In these cultures, popular argument and universally-held belief have abstracted small cultural differences and promoted them into major principles. The dark side of such processes is that they tend to lump together all issues without taking characteristic phenomena and commonalties into account. Together with the tendency to propagate these theories widely, there is a tendency to promote one's own culture to the detriment of all others. By comparison, "weak" cultures, which appreciate more subtle cultural differences, are in no position to promote these cultural principles as fundamental principles and do not have the innate ability to propagate their own culture to other culture spheres.

Japanese culture has been classified as one of the weak cultural spheres. I do not think, however, that such an argument excuses Japan from contributing to the building of the global common good. There must be Japanese among those active in international fields who are frustrated in their desire to make an active contribution to the international community. And this may cause them to feel humble and self-critical about Japan. This should not, however, lead observers to draw false conclusions about Japan. Without a doubt, Japanese culture is influencing—and being influenced by—more cultures today than at any other time in history. As the "internationalization" of Japan continues, Japanese should strive to promote a new culture, a culture that will change international perceptions of Japan for the better.

The author is the director-general of International Economic Affairs at the Ministry of International Trade and Industry. Born in 1945, he is a graduate of Kyoto University's Faculty of Law.



DATA BOX
SHORT TAKES

■ **Singles scene** The number of Japanese preferring to stay single began rising in the mid-1970s. Now it's more or less doubled for both men and women in their 20s and 30s. For example, in 1975, 21% of women in their late 20s and 8% of those in their early 30s said they'd choose the single life; by 1990 those figures had grown to 40% and 14%, respectively. The popularity of remaining single grew even more dramatically among men. In 1975, 14% of those in their early 30s and 6% of those in their late 30s said they'd opt to stay single; fifteen years later, those figures had risen to 33% and 19%. And while many single people in Western countries have long-term or live-in partners, or even children, over half of Japan's singles say there's no one special in their lives.

■ **Train cheats** The Odakyu Electric Railway surveyed its riders about *kiseru*—the practice of paying the minimum fare to get on the train a long way from home, then using your commuter pass to get off at your home station. The company was shocked to find that 90% of those responded pleaded guilty as charged, pointing out how easy it is to cheat the railroad out of the fare, or saying it was a waste of money to pay the proper fare. The scam's days may be numbered, however, as railways develop new ticket and pass scanning equipment and software.

■ **Moving fish** Those assembly-line sushi bars, where you grab what you want as it goes by on a conveyor belt, are enjoying booming sales, thanks to dining trends that favor both Japanese cuisine and value for money. There are some 4,000 such places nationwide, making it a ¥450 billion ($4.27 million) industry. The top four players in the field all have over 100 outlets. Competition in the field is expected to heat up in the future, with some insiders fearing that non-restaurant businesses will try to horn in on this lucrative business.

PANA

FARE DODGING? ***The Japanese have a verb for it.***

BY **CHARLES WHIPPLE**

YOUR GOOD HEALTH

LOOK JAPAN spoke to Sumiko Ogawa about a JICA (Japan International Cooperation Agency) project in Laos that is dramatically raising levels of community health.

"THE villagers were always a bit skeptical of me at first," says Sumiko Ogawa, now a research associate at the University of the Ryukyus, "but they came to trust me after a while. They had to get used to having a young Japanese woman around."

Ogawa recently returned to Japan after three and a half years working on JICA's primary health care (PHC) project in Laos. The project aims to improve the health of local people through community participation.

Before the PHC activities started, Ogawa and her Lao counterparts surveyed inhabitants in 898 villages in Khammouane Province, which they had chosen as a pilot area for the project. Through interviews and questionnaires, project workers were able to discern the local people's specific health needs. They found that the most pressing need was for clean water, and for essential drugs and access to health facilities.

The team began to facilitate supplies of essential drugs because that was a project it could start immediately.

"Malaria and diarrhea are still major causes of death in Laos," says Ogawa. "Having a guaranteed supply of essential drugs in rural communities can be a matter of life or death for these people."

The Lao Ministry of Health has provided free medicine at provincial and district hospitals on a quarterly basis, but supplies run out within a month. The situation at health posts is even worse, and in any case it is difficult for local people to access these health facilities because road conditions are so poor.

"In the rainy season," says Ogawa, "many roads are impassable because of flooding. We had to travel by boat to some places." Roughly three quarters of the 52 health posts in Khammouane Province are inaccessible with anything other than a jeep during the rainy season (May to October), and it is very difficult to supply drugs. Villagers have no option but to pay two or three times the going rate for medicine from private pharmacies, or go to Thailand for treatment.

Sumiko Ogawa (left) and assistants in Khammouane Province, Laos.

"Laotians tend not to go to the hospital until their condition becomes severe," Ogawa says. "Often it's too late to do much for them when they arrive."

In a bid to improve this state of affairs, Ogawa and her counterparts decided to establish a system that would make it easier for villagers to get essential drugs and first aid. They set up a "drug revolving fund" (DRF) as a means to finance pharmaceutical supplies.

Under the DRF, each family in the village participates in a "pre-paid system" to buy $1.40 worth of "essential drugs tickets," which they can exchange for medicine when they are sick. Villagers appoint a suitably qualified Village Health Worker (VHW) to safeguard the essential drugs in his or her home and to provide first aid and health education to patients. Lao counterparts in the JICA project train the VHWs in the rudiments of first aid and drugs and about how to manage, account, and report their health activities.

What follows is simple: patients buy their drugs from the VHWs, who then replenish their stock with that money.

Says Ogawa, "We found that when drugs were distributed as a kit, certain types ran out quickly while others were left over. Under the DRF system, VHWs can order the right amount of essential drugs each month because they have accounted for the rates of consumption."

Community participation was critical to the success of this system. Ogawa, who always wore *shin*, the traditional clothing for women in Laos, regularly met with the villagers over a glass of the locally produced alcohol, *Lao-Lao*, and talked with them frankly about the future plan for PHC activities in Laos.

"They said I was a strong drinker," laughs Ogawa, "but it was through these face-to-face exchanges that we developed a level of trust and friendship. Ultimately, though, I think the villagers were enthusiastic because we had a proposal they could see would work for them."

By the end of 1994, only one and a half years after it was initiated, the DRF system was providing medicine to over 60 percent of people (15,000) in the pilot area. In one representative village, families visited their VHW an average of five times a year and spent just $3 on medicine, or 0.2 percent of their annual income.

As a later extension of the JICA project, Ogawa and her Lao counterparts, with the participation of the local community, were also successful in building new wells and latrines in the pilot area. In doing so, they greatly improved the level of public health. While it is difficult to draw a direct connection, almost no one dies of diarrhea in the pilot villages of Khammouane these days, and the mortality rate for children under the age of five has dropped from 117 to 74 per 1,000 live births.

Recently, UNICEF (United Nation Children's Fund) has adopted the community-level DRF system and is implementing it in five provinces, including Khammouane, and the Lao government now plans to implement the system nationwide.

"The DRF system is pertinent as an entry point of PHC activities in Laos," says Ogawa. "It would be entirely wasteful to fit out one hospital with high-tech machines because most of the cases are unsustainable. Aid appropriate to the level of development in a given country and equal opportunities in health care for the population are what is required."

BY **OSAMU SAWAJI**

THE information RAGE

Japanese are finally gearing up for the Information Age, buying up technology like it's going out of fashion.

BY **NOBUO ARAI**

GOING FAST: *Over 5.7 million PCs were sold in Japan in 1995, a year-on-year increase of 71%.*

MAINICHI SHIMBUN

WITHOUT fax machines, modems, personal computers (PCs), and cellular phones, today's business world would likely grind to a halt. But business isn't the only area of modern life in Japan that has been affected by the "information revolution." Telecommunications equipment is entering the home at an unprecedented rate and, in the process, changing the way we live.

Nineteen-ninety-five has been called "the year of the PC," and it's not difficult to understand why. In January, the high-tech survey company Data Quest reported that 5.71 million PCs were sold in Japan in 1995, representing a year-on-year increase of 71%. This blistering rate of growth is expected to continue, with sales for 1996 being forecast at 7.6 million units.

Until a few years ago, PCs in Japan were mostly used for word processing, creating spreadsheets, and interoffice communications. Although many companies found these functions invaluable, the average domestic consumer was less interested. In the past few years, however, the Internet and easy-to-use operating systems like Microsoft's "Windows '95" have sparked an explosive rise in the level of general interest in PCs. Moreover, the arrival of so-called multimedia computers, which permit users to watch TV, play video games, and access the Internet, has also boosted the dissemination of PCs in the home. These days, it's not uncommon to find high-school students discussing their homework with one another through E-mail.

Ironically, the rise in PC sales can be traced to the beginnings of Japan's ongoing recession. After the economic "bubble" burst, many companies began introducing PCs in an effort to streamline office work. This generated anxiety among middle-aged and older workers, who worried that they might be laid off if they didn't acquire some computer skills. Such people have accounted for a significant proportion of computer sales in Japan.

Cellular phones are being distributed at an even more explosive rate than PCs. As of the end of March, the total number of subscribers stood at 10.2 million, more than twice the 4.3 million subscribers registered just one year earlier.

Beepers (known in Japan as "pocket bells") have also enjoyed steady growth, reaching 10.6 million subscribers as of the end of March, despite predictions that cellular phones would cut into demand. Although beepers have been on the market since 1968, it is only in the last few years that they have really taken off. Last year it became possible to transmit written messages over beepers, making the technology even more attractive to consumers. Currently, about 80% of all individual subscribers are around 20 years old.

A variety of improved services are also being offered to attract more individual subscribers, including a service that confirms sent messages, and voice mail (touted by one large manufacturer as a "globally unprecedented value-added service"). All in all, people in the beeper industry are confident that the number of subscribers will continue to grow.

But perhaps the fastest growing home telecommunications item in Japan is the fax. According to a survey conducted by the Ministry of Posts and Telecommunications in 1995, 16% of all Japanese households have a fax machine. Since a further 32% of the respondents indicated that they would like to own a fax, it seems safe to assume that the dissemination ratio will continue to climb.

Factors that have contributed to the popularity of home fax machines include the introduction of combination phone/fax machines that are easier to use, as well as smaller and less expensive machines. One major manufacturer says that "Home faxes are now considered basic household appliances, like refrigerators."

This influx of telecommunications equipment to the Japanese home has not been trouble free, however. According to some estimates, between 60% and 70% of all PCs bought for home use wind up in "dead storage" without being used. Also, the explosive growth of cellular-phone users has raised concerns that the nation's supply of essential radio frequencies is inadequate.

The growth in home telecommunications equipment in Japan has just begun; latent demand is still huge, representing a potential gold mine for related industries. To realize that potential, efforts must be made to provide Japanese consumers more services, such as teaching beginners how to use PCs, and to establish appropriate infrastructure by such means as expanding the frequencies allotted to cellular phones.

The author is a staff writer at *The Yomiuri Shimbun.*

QUIETLY CLEARING PATHS

LOOK JAPAN went to Akita Prefecture to meet members of a remarkable volunteer group, the Akita Women's Association to Promote International Exchange.

WAPIÉ: ***Grassroots supporting international understanding.***

AKITA Prefecture is located in northern Honshu, a largely mountainous, agricultural area on the coast of the Japan Sea. Akita's residents are stereotypically described as lagging behind the prevailing trends of the country, content to harvest the fruits of their rich natural resources, but a meeting with members of the Akita Women's Association to Promote International Exchange (WAPIÉ) quickly lays that stereotype to rest. Content they might be, but conservative they are not.

This organization has been awarded many prizes for its efforts in community boosterism (including the Japan Foundation Prize for the Promotion of Community-Based Cultural Exchange in 1995) and shows no sign of weariness in its drive to "build communities that are open to the era of internationalization."

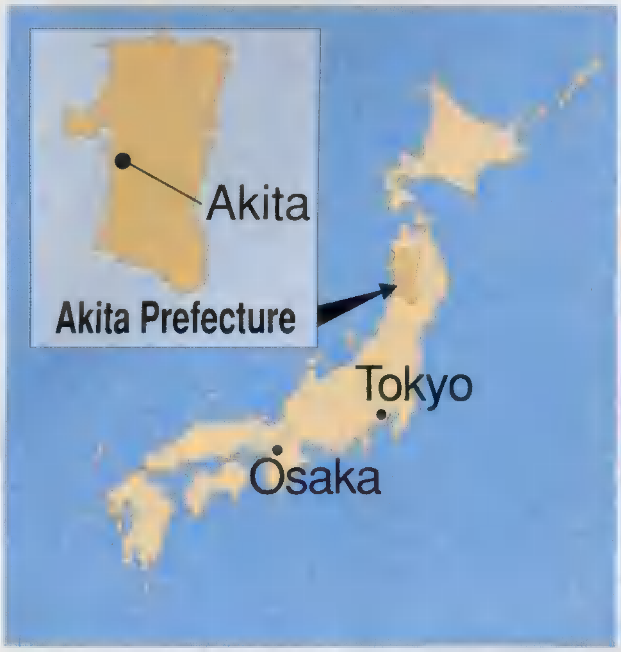
Some 2,300 foreign residents live among Akita Prefecture's 1.2 million population, of whom a sizable proportion (300) are women who have married local residents. WAPIÉ organizes a variety of events and seminars to help these foreigners acclimatize and feel welcome in their new surroundings. Ongoing activities and programs include charity bazaars and fundraising for disaster relief; WAPIÉ Talk, a bimonthly lecture and discussion meeting; WAPIÉ Partner, in which foreign residents are invited to get involved in family-based exchanges; the WAPIÉ Scholarship Program for Foreign Students; an annual overseas study tour, and Japanese language classes for foreign residents. WAPIÉ is also a long-time supporter of Fuyō-Kai, an association (established in 1963) of Japanese women who married Koreans either during or immediately after World War II and who now live in Korea.

LEADING VOLUNTEER MEMBERS OF WAPIÉ AT THEIR HEADQUARTERS IN THE LIFELONG LEARNING CENTER, AKITA CITY: ***Mume Kinouchi, the group's chairwoman, is front center.***

The WAPIÉ Foundation is largely funded by individual donations and charities. WAPIÉ's 460 members, including twenty "foreign support" members, pay annual dues of ¥5,000 ($47).

Says Mume Kinouchi, the chairwoman of WAPIÉ, "Before I got involved in WAPIÉ, I considered myself a typical Japanese; you know, I didn't see much further than my own nose, and I certainly didn't think I was the sort of person who could contribute much internationally. It just goes to show. I now try to get the message across to people that there is nothing special or clever about the kind of work we do. International exchange is an ordinary activity that anybody can get involved in."

By all accounts Kinouchi has been a key member of the association since its establishment in 1985, the concluding year of the United Nations Decade for Women. But the lively 71-year-old, WAPIÉ's third chairwoman, is quick to downplay her role and praise the achievements of her predecessors: "It's not difficult to walk down a path that has



One of WAPIÉ's recent activities—jointly organizing a seminar for local Filipinas. Of the 2,300 foreigners living in Akita Prefecture, more than 300 are women who have married and settled there.

already been cleared," she says. "My job is to improve the path and give those traveling down it a sense of where they're going.

"I think our activities with the foreign community in Akita have gone through several stages. We began by coming to understand the issues, moved on to supporting related activities, and are now essentially cooperating. We enjoy a symbiotic relationship with our foreign neighbors: what we do is of mutual benefit. I believe that the levels of awareness of both Japanese and foreign residents has risen quite a bit since we began our activities. For example, we have found that many more foreign residents are now searching for ways in which they can contribute to their communities. If our foreign neighbors can feel comfortable in their communities, then so can we."

The activities of WAPIÉ are varied and extensive, but each member seems to approach her task as a simple part of her life, a happy aspect of the daily routine. These women have done magnificent work which they regard lightly and speak of with unaffected modesty. Surely, this is the meaning of community spirit. Ⓛ

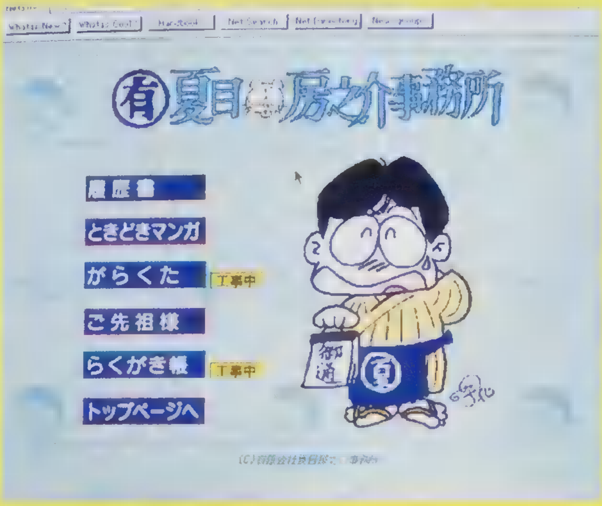
BY **KUNIO NISHIMURA**

DATA BOX
CULTURE

The manga sampler's home page

Fusanosuke Natsume, the author of *LOOK JAPAN*'s Manga Sampler series and a popular cartoonist and *manga* (comic book) critic in his own right, has launched his own home page. It includes his curriculum vitae, cartoons, profiles of leading Japanese illustrators, and a playful look at the many eccentrics and oddballs in Natsume's family tree. Created in cooperation with the Internet magazine *Nikkei netNavigator*, the home page also includes a useful list of bookmarks.

Most of the features are in Japanese, although "*Tokidoki Manga*" offers parallel texts in Japanese and English from our Manga Sampler series. Copyright restrictions on the Internet remain a bit hazy, however, so—at least for a while—the only cartoons to appear will be those authorized by the cartoonists themselves.

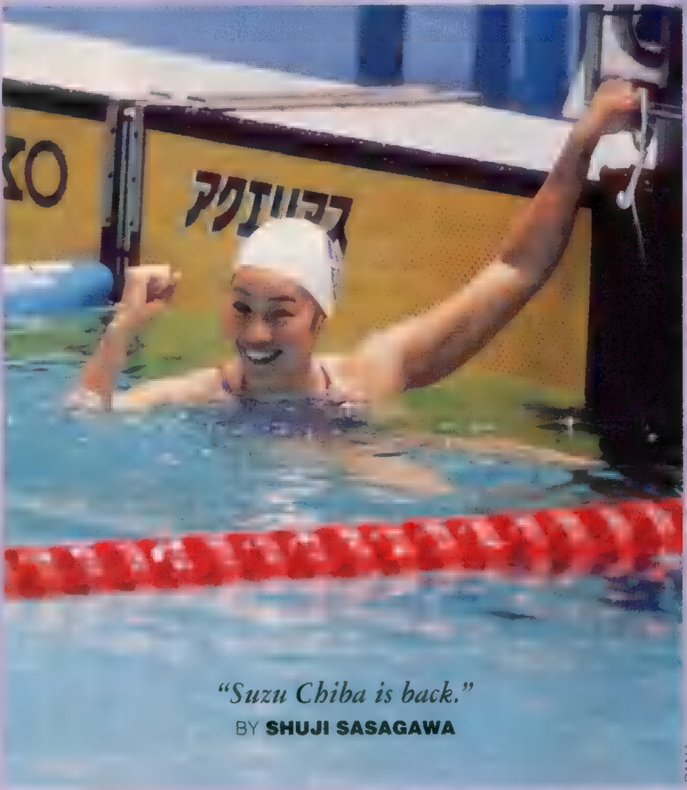


The section on Natsume's family tree, while not directly related to manga, is nevertheless entertaining. Natsume is the grandson of the famous novelist Natsume Sōseki (author of classics like *I am a cat*, *Botchan*, *Sanshirō*, and *Kokoro*), but his other ancestors are equally intriguing. His father was a violinist; his mother, a former harpist, now runs a coffee shop. His maternal great-grandfather was a lumber merchant. Indeed, Natsume himself seems to be the only person in the family who has had any experience of working as a salaryman.

Rinzō Mita, his maternal grandfather, was a landlord with a peculiar hobby: collecting skeletons. Natsume's home page includes a photo of Mita's skeleton-lined study and another of the man himself, posing in a boater hat, long underwear, and roller skates. When the roller skating craze arrived in Japan, the eccentric Mita promptly converted the second floor of his home into his own private skating rink.

The address for Fusanosuke Natsume's home page is http://netnavi.nikkeibp.co.jp/top/natsume/natsume.html **KA**

POOLS OF PERSONALITY



"Suzu Chiba is back."

BY **SHUJI SASAGAWA**

PANA

SUZU Chiba's brilliant performance at this year's Japan Swimming Championships surprised many who thought the twenty-year-old freestyler was past her prime. Having finished first in no less than three events (the 50-, 100-, and 200-meter freestyle), breaking her own long-standing Japanese record in the 200 with a time of 1 minute 59.48 seconds, and finishing a close second in the 400, Chiba is surely the Japan swimming team's best hope for a medal at the Atlanta Olympics this summer.

Japanese commentators began to doubt Chiba's future in the sport after what was by her high standards a poor showing (one win) in last year's Japan Championships. Her performance this time around, however, laid to rest any doubts concerning her abilities. Chiba is back—displaying all the power, grace, and drive that made her Japan's premier freestyler at the age of thirteen.

Chiba began swimming in Sendai, Miyagi Prefecture, at the age of five, in part to help herself overcome an asthmatic condition. She was consistently winning local competitions when scouts from Itoman, a prestigious swimming club in Osaka, spotted her talent. Itoman's chairman, Seiichirō Okuda, was so impressed with the young Chiba that he recruited her himself.

On entering junior high school, Chiba left her family and moved to Osaka to devote more time to swimming. In 1989, at the age of thirteen, she won the 200-meter freestyle at the Japan Swimming Championships. She has been known as "Japan's greatest woman freestyler" ever since.

MEDAL AFTER MEDAL

In the early 1990s, Chiba began to make a name for herself internationally. At the 1990 Asian Games in Beijing, Chiba won silver in the 200 and bronze in the 100 and 400. At the 1992 Barcelona Olympics, she finished ninth in the 100, sixth in the 200, and eighth in the 400, a disappointing showing for an athlete whom many had expected to bring home a medal. Nevertheless, she did become the first Japanese woman to finish in the top six of an Olympic freestyle swimming event.

The highlight of Chiba's career thus far came at the 1993 Pan-Pacific Championships in Kobe. Competing alongside her hero, Janet Evans, and other world-class swimmers, Chiba placed third in the 200-meter freestyle with a time of 1 minute 59.56 seconds, making her the first Japanese woman ever to break the two-minute mark. She also finished third in the 400 meters, setting yet another Japanese record.

"I was excited about finishing in under two minutes in the 200," remembers Chiba, "but I couldn't get too excited about the new record in the 400—Janet Evans was so far ahead of me I couldn't even see her!"

After the 1993 Pan-Pacific Championships, Chiba was faced with a serious career choice: remain in Osaka to train or move to Tokyo and attend university. Unsure how she would balance her swimming and her academic work, she didn't take the entrance examinations and put the decision on hold for another year.

It was then that Kōji Katō, the head coach at Itoman, suggested that she might be happier training in the US, where, as he put it, "they have a more relaxed attitude about swimming, one that better suits Chiba's needs and personality." Katō had been coaching Chiba since she started at Itoman, and he could see how the pressure and regimen of Japanese training was affecting her performance.

Chiba didn't make her decision right away. She was worried about making a change in her training environment so soon before the Olympics and lacked confidence in her English-language skills. In the end, it was the chance to train in the same country as her hero that made the difference. "I've been following Janet Evans' career since I was a child," explains Chiba. "I couldn't pass up the chance to train in her home country."

In April 1994, Chiba joined a swimming club in the suburbs of Santa Clara, California, where she practiced one and a half hours every morning and two hours every afternoon. She was, however, unhappy with her new training environment and her living arrangements. Says Chiba, "The coach was too strict, and the host family poked their noses into my private life."

She returned to Japan in June to prepare for the Japan Swimming Championships, the World Championships in Rome, and the 1994 Asian Games in Hiroshima. She finished seventh in the 100-meter final at the World Championships, but lost in the preliminaries of the 200-meter competition. She wasn't happy about her results in Hiroshima: fourth in the 200 and third in the 400 (later her ranking rose one notch when a Chinese swimmer was disqualified).

She returned to the US in October after making the difficult decision to change her club. She now trains with the Golden West Swimming Club in Huntington Beach, a private organization south of Los Angeles that rents its facilities from Golden West College.

Her coach at Golden West is Bud McAllister, the same man who coached Janet Evans until she graduated from high school. His coaching style is uncomplicated and straightforward, and the atmosphere at Golden West is relaxed. Practices center on the individual medley, a contest that combines four strokes: freestyle, butterfly, backstroke, and breaststroke. While at Golden West, Chiba would practice one hour in the morning and two and a half hours in the evening, swimming a total of 13,000 to 14,000 meters a day. Chiba seems to have complete trust in McAllister, who likes to lighten the mood of training sessions by making his swimmers laugh.

Says Chiba, "In Japan, there was always so much tension during training. I used to think to myself, there must be another way to go about this. I used to be overly dependent on my coach and my parents, but at Golden West I have to do everything on my own. The training is fulfilling, and the atmosphere really suits me."

Randy Folker, an assistant coach at Golden West, smiles when asked about Chiba: "Suzu's English is far from fluent, but she does a great job of communicating. She is fully involved here. After all, she's a fantastic swimmer. The club is proud of her."

After her showing in Barcelona in 1992, Japanese fans expect a lot of Chiba this time around, but she's not going to let the pressure get to her: "I was a little nervous in Barcelona because it was my first Olympics. Now I know what it's like. I'm still an amateur, but I want to go into the Atlanta games with the confidence of a professional."

When asked what her long-term goals are, Chiba is characteristically honest: "I don't know what they are yet. I know I want to have fun swimming. My mantra while training for Atlanta has been 'Enjoy sports. Enjoy swimming.'" And that's exactly what we will do when we watch her compete this summer in Atlanta.

The author is a staff writer at *The Yomiuri Shimbun*.

YOMIURI SHIMBUN

CLOWNING AROUND: *Chiba shares a laugh with a friend between workouts at the Golden West Swimming Club in Huntington Beach, California. Says Chiba, "The training is fulfilling, and the atmosphere really suits me."*

TRANSFERRING OPERATIONS FROM JAPAN TO ASEAN The Japan External Trade Organization (JETRO) has released the results of its ninth survey of Japanese-affiliated manufacturers operating in five countries in the region of the Association of Southeast Asian Nations (ASEAN). JETRO sent surveys to 2,262 companies in Indonesia, Malaysia, the Philippines, Singapore, and Thailand, receiving 977 valid replies for a response rate of 43.2%. The survey was conducted by JETRO overseas offices in the five countries between December 1995 and January of this year.

The major findings are as follows:

Manufacturers of electronic and electrical equipment make up the largest group of Japanese-affiliated makers, accounting for 24.3%. The growing list of metal products makers is due to the increased presence of small- and medium-size makers of parts in these countries in recent years.

Roughly equal numbers of Japanese-affiliated final assemblers and parts and components manufacturers are contributing to the formation of supporting industries in the ASEAN region. Nearly half, 47.6%, of the parts manufacturers and material processors supply products to electronic and electrical equipment makers.

A majority of the companies, 69.0%, began operating in the ASEAN region in or after the signing of the Plaza Agreement in September 1985, when the yen started gaining strength. Since 1991, Indonesia has attracted the largest share, 31.7%, of the Japanese-affiliated companies operating in the region.

Many companies, 68.0%, have enjoyed profitable operations, particularly those operating before 1990, for which the figure rises to 76.1%.

The most common reason (36.5%) for transferring operations from Japan to the ASEAN region is to gain better access to local markets. While many Japanese-affiliated firms were thought to have been set up to export from these bases, the survey shows that sales in these markets have been a greater incentive. In Malaysia, which has a large number of electronic and electrical equipment parts makers, the second most common reason (24.2%) for setting up in this country has been to meet the needs of locally based Japanese assemblers.

Firms that plan to shift production bases to third countries rose to 31.0%, up from 17.9% in the previous survey. The main target is the ASEAN region, named by 49.4%, followed by China (25.3%), Indochina and Myanmar (9.5%), and India (1.3%), illustrating Japanese firms' increasing focus on Asia centering on the ASEAN region. Plans to transfer production of certain existing products were mentioned by 82.7%. **HC**

MITSURU EBINA

EVERYDAY CONCERNS

LONG-DISTANCE LOVERS

I'd like some advice about my daughter's long-distance romance. She's 24 years old and works in an office; her boyfriend is 28. They've been seeing each other for a year and a half now. When she was still in college, he sometimes came around and they seemed to get along quite well. When he was transferred to an office in another prefecture last spring, he vowed to maintain their relationship.

Every two months, my daughter goes to visit him, and each time she does my husband criticizes me for allowing her to spend the night with a man to whom she isn't even engaged. They have promised each other that they will get married as soon as they can save up enough money for the wedding (they don't want to rely on us).

I am content to give them the benefit of the doubt and let them follow through on their plans, but my husband doesn't feel the same way. It's hard to see my daughter caught in between.

Woman, Fukushima Prefecture

RESPONSE

Any father would be bothered if he had a daughter of marriageable age who went to visit her boyfriend and then—using the length of the journey as an excuse—stayed the night. But the fact is that you can't stop her.

I'm a father myself and I understand how your husband feels, but even if your daughter and her boyfriend were engaged it would simply be a formality, wouldn't it? It would be better than nothing, but it's really all up to your daughter and her boyfriend. As a parent, you should of course speak your mind, but then all you can do is, as you say, "give them the benefit of the doubt."

Not only is your daughter no longer a minor, she's a working woman of 24. You should emphasize this fact to your husband: she can't be a child forever. At the same time, you should ask your daughter to take proper responsibility for herself. Remind her that independence entails responsibility as well as freedom.

Katsumoto Saotome, author

WORKING (AND WORRIED ABOUT IT) MOM

I am 29 years old. My daughter was born last year. She's grown a lot since then. She loves to be held and is cute as can be. I am currently on child-care leave from work, but I'm supposed to return to work soon. My mother-in-law lives with us and has agreed to take care of my daughter during the day.

My problem is that I'm worried my daughter will miss me while I'm at work. I'm sure that I'll miss her. I've thought about taking another six months off work, but I'm afraid that it will only become harder to leave her.

So I'm planning to return to my job and use various systems within my company to combine work with child care. If I'm away from my daughter while she's still an infant, will she feel less close to me as a result?

Woman, Chiba Prefecture

RESPONSE

I'm sure that many working mothers share your concern about leaving your child with your mother-in-law while you're at the office. However, you seem to be determined to return to work as scheduled, and I think you've made the right choice. Indeed, you're very lucky that your mother-in-law is willing to care for your daughter during the day.

It will also be nice if you can make good use of the systems at your office that are designed to help mothers combine child care with work.

At the institute where I work, there are some young mothers like you who drop their kids off at nursery school before coming to the office. They're all very busy but they seem to be enjoying themselves both as mothers and career women.

If you and your mother-in-law can agree on how to care for your daughter—and if you make an extra effort to spend time with your daughter while you're home—you need not worry about your working having a negative influence on your child.

Saeko Saegusa, critic

NOTE: The questions and responses featured in this series are taken from *The Yomiuri Shimbun*'s daily *Jinsei Annai* (life guide) column.

AUGUST 1996

PREVIEW

NEW SERIES!

LOOK JAPAN kicks off a new series on deregulation and structural reform with a look at the recently amended Large Retail Store Law.

SPORTSMANLIKE CONDUCT

A report on the ever increasing importance of sports in Japanese society.

GLUED TO THE TUBE

Japanese are watching more TV than ever before. Why?

KAMPAI!

Japan just wouldn't be Japan without sake.

And much more in the next issue of *LOOK JAPAN*

SUPERHIGHWAY

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Finding the Right Applications. Sometimes it Takes Another Point of View.

It took a Manet, a Degas, a Van Gogh, to recognize that the *ukiyoe* prints used to wrap Japanese pottery shipped to Europe were art as exciting and valuable as the pots they protected. The outcome is history, art like none the world had ever seen before.

At NTT we think there's a lesson here. As Japan's largest common carrier we have built and operate a network of more than 60 million circuits. As we look to the multimedia future, we see a need for many different viewpoints to help us improve the services we offer to our customers.

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NTT is the partner globally connected businesses need. In the unexpected insights we each find in the other: that's where richer futures are born.

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